Bytes and Backbeats

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Art and Artifice Encounter Technology

Much has been written on questions surrounding art, craft, amateurism, authenticity, and meaning in cultural artifacts. This studio study concentrates on the relationship of these broader ideas to the shifting dynamics of participation between composer, performer, and consumer of music. I propose that we are witnessing a paradigm shift in the music consumer’s relationship to music creation. This is a circular proposition where the technology that facilitates new forms of music consumption is also returning consumers to the act of musical creation. To begin I follow researchers struggling with the implicit cultural hierarchies that seem to rank these successive elements—composer/writer at the top, performer attempting to interpret her own or others’ compositions, and the consumer struggling to participate within the context of what is often described as the diminished experience of recorded versus live music. Where are we now in this relationship between the technologies of reproduction and the notions of art and artifice? And most critically, what is happening to that lowest of status participant, the listener? This continues my work from chapter 3, which first explored the dichotomy of art and artifice, using it to frame discussions of determinism, the musical network, and authenticity.

In a great deal of cultural analysis we find the effects that are attributed to music recordings getting the short end of the stick. Walter Benjamin famously declares that as a result of mechanical reproduction of an original work of art “the quality of its presence is always depreciated.” Since then, other significant voices have chimed in with similar sentiments. Here’s
Roland Barthes’s relevant comment: “Today, under the pressure of the mass long-playing record, there seems to be a flattening out of technique; which is paradoxical in that the various manners of playing are all flattened out into perfection: nothing is left but pheno-text.”

Jacques Attali attacks on similar grounds, describing what he perceives as excluded in recorded performance:

Little by little, the very nature of music changes: the unforeseen and the risks of representation disappear in repetition. The new aesthetic of performance excludes error, hesitation, noise. It freezes the work out of festival and the spectacle: it reconstructs it formally, manipulates it, makes it abstract perfection. This vision gradually leads people to forget that music was once background noise and a form of life, hesitation and stammering. Representation communicated energy. Repetition produces information free of noise.

Edward Said comments on (and sides with) Adorno:

Some years ago Adorno wrote a famous and, I think, correct account of “the regression of hearing,” in which he emphasized the lack of continuity, concentration, and knowledge in the listeners that has made real musical attention more or less impossible. Adorno blamed such things as radio and records for undermining and practically eliminating the possibility that the concertgoer could play an instrument or read a score. To those disabilities we can add today’s complete professionalization of performance.

These accounts discredit recordings as diminished versions of musical performance and the effect on musicians as restrictive; Simon Frith points out that in the 1960s “the classical music world was wary of musical perfection achieved through studio ‘cheating.’” One frequent argument is that the musicians themselves, upon hearing their performances played back to them, are driven by an ethic of perfection to save themselves the embarrassment of sloppy or theoretically “wrong” performances. Playing becomes divorced from the emotional connection to a live audience and is diminished by this ethic of perfection. In this way, from the simplest technology of reproduction through the increasing complexities of creating final commercial recordings, the recording studio process is often defined in these negative terms—sterile, artificial reproductions of contrived performances constructed through a form of musical deception.

In a recent article on music and technology the New Yorker critic Alex Ross concludes that one cannot conclusively pin this “phonograph effect”
on musicians’ response to hearing themselves recorded, but he acknowledges that a strong case can be made for such an effect. Certainly there was, and continues to be, pressure from recording companies on musicians to create products that can bear up under the scrutiny of repeated listening. While the true nature and extent of the phonograph effect cannot be known, it has certainly been a factor in the evolution of musical performance. Despite this, many artists from all genres have found recordings preferable to the concert hall or the stadium, most famously Glenn Gould and the Beatles. And more contemporary voices of analysis have purposefully painted a more complex, balanced view of art and artifice, original and copy, personal expression and technology. In any event, the march of technology is not slowed by these negative evaluations as it interacts with the cultural dynamic. Certainly technical innovation is not to be halted by fears that it might diminish experience. Music sounds themselves most often originate in the technology of musical instruments—the piano, for example, is a technological marvel. Even live musical performance is now most often dependent on state-of-the-art technology. This phrase “state of the art” is itself very revealing regarding the cultural relationships of technology, art, and artifice. In previous times state-of-the-art technology might have been considered an oxymoron, but it is currently the standard currency of technological consumption. Art and technology have become increasingly and inextricably connected.

This connection suggests that it is no longer credible to center discussions of art and artifice around technology. In the context of a debate between sound engineers and the musicians in a rock band, Frith comments that “nature is pitted against artifice, ‘true’ music (‘live’ music) against ‘false’ (studio or electronically manufactured) sounds.” But that was referring to a particular moment in early rock-and-roll history: the idea of the sound engineer as the traditional enemy of the musician in the “natural versus artificial” debate no longer has resonance when the majority of musicians are sound engineers themselves. Almost all popular music musicians are involved in the technology of recording now, and if they’re not, then they are probably anxious to ally themselves with someone who is, because they recognize that the life of their music in the world is dependent on technology. Similarly, in Western art music the once thriving contest between Nimbus recording and multimicrophone studio recording has receded as the multimic approach dominates all current releases. While historically of interest, the contemporary landscape points to the obsolescence of the debate.
As is clear from my application studies, current recording capabilities have rendered the notion of “performance” problematic.\textsuperscript{11} From Britney Spears and Ashlee Simpson caught lip syncing to the Milli Vanilli debacle,\textsuperscript{12} there are endless examples of how performance is rendered problematic by the current technology. Even live performance is subsumed by the culture of recorded music. As Charles Keil points out, “the normative recordings intensify live performance as something extraordinary, abnormal and magical as well.”\textsuperscript{13} This view privileges live performance but it does so by acknowledging that the recordings are now the base experience—the “normative” for music consumption. But beyond this, the proliferation and devotion to mass-produced media indicates that in contemporary culture the copy is often preferred to the original.\textsuperscript{14} Sometimes the reproduction is even more “real” than the original—such as when a “live” event is being staged for ultimate presentation on TV, or in a live music performance where most eyes are fixed on the large-screen video projection. In this context it’s clear that technology is a direct contributor to the creation, execution, and experience of art.

Frith, at a meeting of musicologists, makes the following appeal:

The implication of our discussions was that rather than speculating how technology will change music culture, we should be studying music culture for clues as to how technology will be used and shaped. Popular music has its own long history of relations between the local and the global, the licit and the illicit, craft and entrepreneurship, machines, sounds and careers. It is these relations that we most need to understand.\textsuperscript{15}

We continue then to detail some of the ways that current technology is being used to shape the creation, presentation, and experience of music. At the same time we can draw parallels between some of these practices and the fundamentals of the musical experience prior to recording in the form of structure, function, and participation. The composer, performer, and consumer categorizations provide interesting insight on the ways music has participated in prerecording cultural life and on how technology has been used and shaped to create social value.

\textit{Technological Parallels to Prerecording Music Culture}

Twenty-first-century technologies provide composers with new structures, performers with new functions, and consumers with new access to partic-
ipation. These expanded capabilities indicate how traditional roles within music culture have influenced technologies, compelling social and creative interaction. Technology also assists in breaking down these categorizations, further driving the contemporary experience in directions with more parallels to prerecording music culture. While, as Chanan maintains, it is no doubt still true that “In surviving oral cultures the relations between musical senders and receivers is much more fluid and symbiotic than in modern Western society,” it is also true that technology is a partner to forces that are driving an increasing fluidity and symbiosis in contemporary musical relationships.

The composer finds new structural models through an expanded interaction with various audio elements. Instrument samples provide access to unlimited musical instruments and sounds, either played or programmed from a keyboard or a computer. Remixing techniques use source material to create completely new arrangements of previously recorded material. My “Milee Yookoee” is an example of a composition created entirely from previously recorded and then repurposed audio. Repurposed audio samples from previous recordings provide a structural link to music history. Mash-ups—wholly new compositions created from the (often unlikely) combination of elements from disparate recordings—offer yet another new compositional model. The most famous mash-up to date is DJ Danger Mouse’s *The Grey Album*, which combines the vocals from Jay-Z’s *The Black Album* with reprocessed tracks from the Beatles’ *White Album*. Such activities as these clearly link new compositional approaches to broader cultural connections.

Compositional models are also radically altered in structure as a result of recordings functioning as the new musical “score.” Compositional sketches may be created by one musician through recordings of multiple parts by a single individual. Ultimately, one musician may create fully realized compositions. I created “Milee Yookoee” in isolation, though audio elements were drawn from Internet resources and the final recording/composition is being shared over the Internet via download. Recordings capture compositional structure along with performance, thereby more closely linking the two functions. As a result, the once solitary pursuit of composition may occur within the socialized environment of performance, integrating structures in ways that provide greater opportunities for collaboration.

The performer finds new functional capabilities in technologies that promote more subtle expression, the same technologies that are often im-
plicated in separating performers from their audience. Amplification allows a greater dynamic range in performance. Video projection at larger venues allows understated expressions to be experienced in a “live” setting by large audiences. The combination of large-scale concert experiences with an increase in perceived intimacy between audience and performer reinforces fundamental cultural functions such as cooperation through shared experience. It is telling that a number of the large popular music festivals are given names such as “A Gathering of the Tribes” or “Tribal Stomp.”

Studio performance has become much more malleable with the development of recording technologies. Increased control over final versions of recorded performances began with the ability to edit multiple performances into a single version, extending control over recordings to outside the timeline of the original performance. The advent of multitracking and overdubbing allowed construction of recordings from a variety of individual performances created at different times and even in different places. Combined with the new tools of composition, such as repurposed audio, these capabilities further conflate notions of composition and performance. The “Milee Yookoe” project uses multiple tracks in order to accommodate the use of a large number of audio elements that function both as repurposed composition and repurposed performance. The fixing of recorded performances, including timing and pitch elements, allows easier creation of music that conforms to professional standards. In this way the professionalization demands created by nineteenth-century specialization are made functionally accessible to a much wider population. Advances in the price and performance ratio of recording equipment have meant that home recording allows the capture of more intimate and raw performances that still match fidelity expectations of the consumer. This has also meant that access to recording and distribution technology provides creative leisure that is more integrated with community building and sharing. For example, I am able to (and have) shared “Milee Yookoe” with many friends and colleagues through email of mp3 attachments, and I now have it available on my website. All of these elements combine to have a freeing effect on the demands of musical performance and participation.

The consumer finds new levels of engagement in the musical process that fosters a sense of cultural participation. Technology allows increased access, intimacy, and fidelity of musical experience for the consumer. Improvements in the quality of audio reproduction have increased sonic detail in both live and recorded performances. Recordings have generated
enormous opportunities for access to music from around the world as well as providing the opportunity for repeated listening. Music is made more compelling through repeated listening as the listener has the opportunity to adapt to the experience. For example, the polyrhythmic structure of Milee Yookoe begins to sound more natural when it has been heard repeatedly. These new levels of access, intimacy, and fidelity provide a stronger connection to the experience of listening to music and thereby reinforce the social connections binding music creation to music reception.

The consumer’s participation includes creation of individual musical “space” by enhanced control over playback of recordings. The consumer controls all of the following:

1. What is played (with easy access to music from all over the world)
2. When it is played (now including broadcasts via Internet access or podcasting)
3. Where it is played (with all music now completely mobile via iPods and the equivalent)
4. How it is reproduced (from earbuds to audiophile)
5. The order it is played in (often from one’s entire library via iPod/iTune type technology)

This participation encourages a greater interest in music given the opportunity to take part as a “performer” of the listening experience, and thus as an active collaborator in the creation of the musical experience.

In this dynamic between technology and the continuum of music creation through consumption, most analysis focuses on the two fundamental relationships: the relationship between the composer and the performer, and the relationship between the performer and the consumer. Relative to composer and performer the recorded mode of music delivery has cemented the ability of the composer to be the performer, sometimes to the extent of elaborate arrangements where the composer performs all of the parts separately. Recordings may be preferred over live performances by composers as well as by performers and consumers. As long ago as the 1960s Milton Babbitt suggested that recordings offer many advantages over the “intellectually trying, socially trying, physically trying conditions of the concert hall,” and one can picture the Beatles, Steely Dan, and many other popular music artists nodding in agreement.

But it is largely with the second primary relationship that I am concerned here, between the performer and the audience, as recording tech-
nology ties the two more closely together. Consumers are taking a more active role in many aspects of how they consume and share their experience of recorded music. This in turn changes the way performers imagine their relationship to their audience. As Gould pursued his very elaborate recording projects, he was motivated, in part, by his belief that recordings make for “a new kind of listener—a listener more participant in the musical experience.” As we shall see, new technology has continued to feed this listener participation, now encompassing music creation and performance.

**Twenty-First-Century Compositional Musicking**

Are we indeed entering a new period of cultural practice in which greater numbers of people are once again practicing music, as they did before the advent of recordings? Are computerized compositional capabilities making the creation of new music a more widely practiced cultural phenomenon? From Gould to Frith I have traced some of the evolving acknowledgment of the broader role of the music listener, facilitated by the various technologies of recording. Is digital technology partially responsible for driving a greater quantity of individual musicking that encompasses composition? Tracing analysis of the cultural condition into the twenty-first century yields further speculations and observations regarding the emergence of an even broader cultural participation in the compositional aspect of music making.

Timothy Taylor documents a contemporary shift toward musicking that is intimately tied to the technology of music. Taylor begins by noting a relationship between Attali’s stages of music and the development of music technologies. In faulting Attali for missing the connection, he furthers the contemporary model of reciprocity as the primary mode of understanding music in culture: “Failing to theorize the technological aspect of these stages means that Attali slips into a deterministic model of technology in his book, as if each of these new sociotechnical systems simply produced new musics rather than being caught up in complex webs of music technology, society, and history, all of which presuppose each other.” Nonetheless Taylor uses Attali to acknowledge the current potential for a new level of broad cultural musicking: “Still Attali’s optimism about ‘composition’ is infectious. With digital technology, there is some hope that people—at least those who can afford computers—will begin to make music for themselves again using their computers and cheap, easily available software; it isn’t even necessary to buy much hardware anymore.”
At the same time Taylor is quick to severely qualify such “hope” by noting that, as regards the democratizing potential of technology, “such arguments are frequently so hyperbolic as to take one’s breath away. . . . claims for the democratizing potential of almost any technology have been around for a long time.” Taylor also explicitly explores the relationship of contemporary practice to that of music making in the era before there was recorded music, managing both to celebrate and to problematize the contemporary potential for new paradigms of widespread musicking. He notes how the phonograph for the most part turned the same people who had previously made music into consumers of music, and thus people who might have once made their own music learned to buy it instead. Concepts such as genius, talent, and masterpiece that inhibit many people from making music became even more instantiated in Western European cultures. The rise of the hip hop and dance music DJ, however, redefined the function of the turntable: no longer simply a reproductive device, it became a productive one as well. Human agency struck back.

While Taylor acknowledges the potential of agency here he doesn’t really speak to the broad spectrum of people who now buy rather than make their own music—DJs, after all, occupy a small portion of the cultural landscape. To what extent, then, has individual agency actually struck back? Similarly, in acknowledging the access to compositional tools, he does so in the context of the isolating nature of the “music on the computer” experience:

Before the advent of recording technology and radio, people made their own music most of the time, but what is radically different today is that it is now possible to create entire worlds of sound all by yourself with your computer; it is no longer necessary to be with other people. Music as social activity is becoming a thing of the past for many of these musicians.

The interconnectivity of the Internet provides some potential for relief from the solitary nature of the music maker at the computer. Ultimately Taylor sees some possibilities for “at least a simulated social environment that animates [these musician’s] agency in the face of the potentially dehumanizing nature of digital technology.” Taylor sees “potential,” but the context of his analysis might inspire one to judge the brave new world of democratized musicking as “damned by faint praise.”
simulated nature of connections made via the Internet downplays the potential for meaningful social interaction. But more recent developments and activities are animating more optimistic views on the interconnectivity of larger populations with musical content creation.

In a 2003 volume of essays edited by René T. A. Lysloff and Leslie Gay, entitled *Music and Technoculture*, further claims for the progression of broad-based musicking are chronicled. The widely reported observation that the Internet opens up distribution channels is detailed in referencing bands that are unaffiliated with record companies: “They circumvent the established recording industry altogether by making ‘the world your hard disk [and] everyone a publisher,’ says David Post.”

In a separate article Lysloff traces one particular community—the mod trackers—who “do more than just share prerecorded music; they are active as composers, manipulating sound samples with virtual mixing boards to create their own mod files.” These are emanations from small communities, but they might be more suggestive of a cultural phenomenon around musicking if it weren’t for the fact that most of the websites where he has observed this activity were, just three years later in 2006, no longer active. As with Taylor, we get suggestions of broad-based compositional musicking but little that backs up these anecdotal observations.

Bill Ivey and Steven J. Tepper present a much broader case in *Engaging Art: The Next Great Transformation of America’s Cultural Life*. This volume theorizes a true paradigm shift in the cultural participation in music making. In an introductory article, entitled “Cultural Renaissance or Cultural Divide?” Ivey and Tepper outline their thesis of a large-scale cultural shift. First they trace the earlier history of a professionalized culture, fed by non-profit arts organizations. Arts were presented locally but the development of artistic performance and style were part of an international standard. Media and distribution technologies fed this elitist standard of arts presentation until “the amateurs at home were overshadowed by the new class of creative ‘professionals,’ and audiences were increasingly socialized to be passive consumers, awaiting their favorite radio broadcasts or sitting in darkened theaters and concert halls, applauding on cue.”

Along with a number of other media and culture commentators that they reference, Ivey and Tepper suggest that there is a new revolution in amateur arts creation, driven by what one commentator calls the “Pro-Am Revolution” populated primarily by “weekend warriors.” This is understood as a shift that harkens back to the nineteenth-century vision of the piano in the parlor and the necessity of amateur music making in the
world before recordings. However Ivey and Tepper add that “What sets the new participatory culture apart from the older local participatory culture of the 19th century is that amateur art making is taking place in the shadow of giant media. Moreover, there is now an explosion of cultural choice made possible by new technologies and a renewed mingling of high and popular art.” Ivey and Tepper cite the reduced cost of digital technology (especially in music and movies) and the availability of new distribution channels via the Internet as fuel, and the explosion of home recording studios and a threefold increase in sales of guitars in the last ten years as some of the evidence. This new participatory culture is predominately populated by males, in contrast to the piano in the parlor culture, where the amateur pianist was typically female.

Not all of the elements in the evocation of nineteenth-century musicking hold up. Cook notes that the professionalization of performance was not simply a twentieth-century product of music reproduction or a result of the participation of the state-subsidized nonprofit organizations. The demands of virtuosity that had arisen since Beethoven had already firmly entrenched the professional in the world of musicking, as witnessed by the traveling musicians of eighteenth- and nineteenth-century concert hall performances. Cook also brings up the washboard craze of the 1930s and the Fostex eight-track of the 1980s as examples of a continuous line of musicking that one might draw from the nineteenth century to the present. The folk music revival of the 1950s and the rock band culture from the 1960s to the present also belie a viewpoint that suggests a twentieth-century abandonment of personal music making. But these expressions of musical participation don’t really challenge the dominant paradigm that had placed music recording beyond the reach of the vast majority of people. Perhaps Ivey and Tepper do not sufficiently distinguish between musicking (from the piano parlor to the home recordist’s bedroom) and musical recordings that can be easily shared internationally via the Internet.

There does appear to be a real difference in the participatory cultures of the digital world of musicking and that of the analog past. Ivey and Tepper point to new developments that are dramatically changing the cultural landscape. The capabilities of digital technology have not only transformed the compositional paradigm to the new constructive model that I have described, but the practice of amateur musicking is also being transformed by the widespread availability of free and low-cost computer recording software along with mp3s and Internet streaming that provide an enormous expansion of distribution capabilities.
The Rise of the Consumer: Technology Supports Participation

The Sony Walkman was introduced in 1979, and the era of personal, portable playback technologies was launched. The history of the Walkman is usually told in the context of it having “forever changed the way consumers listen to music” — a phrase that comes from Sony’s telling of its own history. Today, if one searches Google for this phrase, it appears most frequently in the context of the iPod. The portability and flexibility of the iPod has further entrenched recordings in everyday experience, greatly expanding the consumers’ control over their listening experience. The cultural penetration of the iPod is indicative of parallels, if somewhat indirect, to the entrenchment of music into the structure of prerecording musical cultures. The more casual and participatory nature of music performance in those earlier cultures and the social cohesion that it engendered are both mirrored and amplified by the iPod’s prevalence in everyday life activities. The level of participation that the iPod affords the consumer in the scale of access and the many ways that it allows users to share their experiences far outstrip the technology of the Walkman.

Although a playback-only technology, the iPod expands the personal interaction with music in relation to time, place, activity, and access. This dynamic drives listeners into a more creative relationship with their experience of music: redefining participation for the digital age. One might even suggest that this is a “purer” relationship, as it creates autonomy from the constrictions of time and place. At the same time music becomes more embedded in the structure of, and participant in, the functions of the individual’s cultural experience. Interaction with the iPod ranges from the most basic kinds that were introduced with Walkman technology—such as walking or riding on the bus—to the more elaborate, necessarily digital expressions, as listeners construct more and more of their personal musical space and are able to share that space with a broad virtual community over the Internet. This is further amplified on the Internet via many of the social media sites. The early popularity of one such site, MySpace.com, was built in large part out of people’s desire to list their favorite music. These activities begin to mirror aspects of composing popular music as they take on a personal form of composing identity. The constructive nature of making iPod playlists mirrors the constructive nature of popular music creation. Music on the iPod may also be a buffer against the assaultive urban landscape, allowing a closer connection to self when confronted with the anonymity of mass culture.
The iPod allows vast amounts of music to be available from one instantly accessible source, and this yields much greater interactive capabilities, most notably in the use of the personal playlist. The playlist capability of CD players was noted in the late 1980s as an important step toward consumer engagement with recorded music, along with mix tapes and even the originator of the personal playlist—the jukebox, but they all pale in comparison to the iPod playlist. The iPod allows the listener to easily construct sequences of material from the entire library of material on it—which may include thousands of selections. With iPod technology consumers now control many more aspects of the recorded music experience than they possibly could over the live music experience. Thus consumers may be much more engaged in their relationship to the recorded musical performance. We decide what songs to listen to, in what order to listen to them, and when to skip tracks or switch playlists. When we are more interactive in the listening experience we are more active musical participants. This dynamic has increased dramatically in the age of the iPod.

Personal musical tastes create strong personal identification with musical artifacts. An impulse toward self-definition via record collections has long been a staple of cultural expressions made possible by audio reproduction—the forerunner to “composing identity” on MySpace and Facebook. Ivey and Tepper point to what they call the “curatorial me,” which refers to this kind of advanced engagement with one’s personal library of cultural artifacts. They mention TiVo—the digital selection and recording device that assists with consumers’ archiving of television shows—which has some interesting parallels to the iPod’s playlist.

Playlists may reflect this inclination toward the “curatorial me”—music sequences that are personalized by the listener—but they may also be generated randomly by choosing “shuffle mode,” which assembles haphazard sequences. The iPod shuffle mode represents one of the most interesting ways in which this technology has broadened the consumer’s encounters with music. These randomized playlists can forge links between pieces of music that may never have previously been in anything but the most remote kind of contact. This is a passive choice in one technological sense (the machine, not the operator, makes the choices), but the choices come from the listener’s own library of music, offering what can be surprising insights into one’s own musical preferences. In any event, choosing to access this feature may create a very active and different kind of participation with music on the part of the listener. It is my general contention here that this activist attitude on the part of the consumer has inspired the appear-
 ance and use of new music construction programs such as GarageBand, and so we have come full circle in the process of music creation.

None of these capabilities provides the consumer with any understanding of the fundamentals of music theory, and it’s true that the formalities of music escape the vast majority of consumers—they don’t understand music theory or even the idea of the musical note. They are more likely to hear musical intervals, chords, counterpoint, and the like as impressions of sound. However, the listener is becoming more and more aware of the technology of popular music creation. The division between consumers and recordings is breaking down primarily in that consumers understand the constructive nature of popular music. They still may not grasp “notes” but they do understand that music is constructed in pieces, over time—not in one lump in real time. As Frith has observed, the notion of multi-tracking is familiar to most people now, so the consumer hears “the music being assembled.” This is part of a new kind of “aural training” for contemporary music consumers. Combine this training with the iPod model of participation and the community capabilities of the Internet, and the stage is set for widespread participation in the construction of music recordings.

**The Rise of the Consumer: Technology Drives Creativity**

GarageBand—the consumer-oriented music construction program that comes free with all Macintosh computers—represents a final encircling of the musical continuum from composer to performer to consumer back to composer. Recently there has been an increasing acknowledgment of the reciprocity between creator and performer and then between performer and audience. Music doesn’t just flow hierarchically from author through the performer to the consumer; there is an interaction in each exchange. However, I believe we are now at the threshold of a new dynamic that extends beyond reciprocity to circularity. Cook has pointed toward this dynamic in describing the changing role of the musician’s participation in music production: “What makes a musician is not that he knows how to play one instrument or another, or that he knows how to read music: it is that he is able to grasp musical structure in a manner appropriate for musical production—the most obvious (though of course by no means the only) example of such production being performance.” There is a current crop of musicians who “grasp musical structure in a manner appropriate for musical production” without coming anywhere near performing on a
traditional musical instrument. These are the successful musicians that create on the computer using samples, preassembled loops, and other bits of sound. The composition may be built in ways that almost completely bypass the need for any of the conventional musician’s skills. This is the new paradigm of music construction. GarageBand is a program designed to bring these techniques to the public at large—a chance for the greater community of music lovers to join this new community of music creators. Life’s natural creative impulses are engaged through the interaction with music construction provided by this kind of consumer software.

GarageBand makes all the musical elements easily accessible through samples and loops, with a minimal amount of musical knowledge and no ability to play an instrument required. The user is guided through simple steps that ease the process of assembling musical fragments into new musical constructions. These prerecorded elements can be combined with live recording into GarageBand for more sophisticated and personal compositions. The easy interface and the extensive library of musical building blocks, along with its free distribution with new Macintosh computers, separates GarageBand from previous music construction software. Elements of GarageBand have appeared before in consumer software, and they have been surpassed for some time by professional software, but the overall package represents a new plateau in consumer access to music construction.

GarageBand takes the ethic of participation from the iPod and combines it with the consumer’s understanding of the constructive nature of audio recording. GarageBand then places the tools of contemporary composition into the hands of the consumer in the simplest possible manner. The reach of the consumer thus extends back into the realm of the composer. This closing of the circle of musical practice represents the further disintegration of the formal roles occupied by the composer, performer, and consumer of music. Because the consumer is already aware of the artifice, aware of the construction, aware that music is put together in pieces—and already puts together the listening experience piece by piece on their iPod—it is a relatively short step, the step to GarageBand, that circles the consumer back to the role of composer. This does bring tangible practices into Attali’s predictions regarding widespread, democratized composition which he identified at the time as a kind of “abstract utopia.” Attali correctly identified the manner in which the coming surge in homegrown composition reveals the direct relationship of music to technology and knowledge: “In composition, it is cartography, local
knowledge, the insertion of culture into production and a general availability of new tools and instruments.”

One might think of the iPod as at the Baudrillardian edge between active and passive: “That is where simulation begins. . . not into passivity, but into the indifférentiation of the active and the passive.” The iPod’s isolated and passive listening experience is activated by a whole new realm of opportunities for choice to be made by the consumer. Chanan suggests that through reproduction technologies “music becomes literally disembodied [and this represents]—in a word, the negation of musica practica.” Yet he also notes that “musica practica cannot be put down . . . Musica practica is an authentic object of popular pleasure, an embodiment of the human need for community.” While the iPod technology may be viewed as a drive toward community and connection or as a part of the postmodern experience of dislocation, GarageBand brings us back firmly to the realm of active participation, to musica practica, in a directly creative enterprise (and the program’s community-oriented, grassroots name is no accident). Though the recordings themselves might be considered occupants of Baudrillard’s world of simulacra, this hardly disqualifies them from the contemporary experience of community. The consumer engages the composer and performer more directly by controlling various aspects of their musical experience via the iPod—but GarageBand provides the tools to connect the individual directly to the experience of musical creation.

So instead of Frith’s “confusion between musician and technician, between aesthetic and engineering sound decisions,” we are moving toward an integration of these roles, a more fluid circularity in all musical functions—creation, production, consumption. As Attali has argued, technology is driving “the insertion of culture into production”—where culture is here represented by the creative impulse. This integral role of technology means that it is sharing in community-building impulses just as the integral role of music shares in these same impulses in the African folklore tradition. And, as in this particular African music where drums and flutes predominate as the technological tools of music making, the creative impulse here drives the technology back to our own preferred tools for creation—which in the case of contemporary Western culture means programs that run on the personal computer. Théberge recognizes the extent to which consumer-based technologies have grown to become a part of the musical landscape, marking “consumer audio technology as a significant enabling factor, operating at a number of levels, in a wide range of essentially participatory, social and musical practices.”
These cultural currents, this drive toward participation, also support the production of live performance, which is why CDs and the iPod haven’t killed the concert hall, the dance hall, or the nightclub. In fact live performing revenues have supplanted record sales as the primary income source for many musicians. As Byrne suggests:

I don’t think fewer people go to live shows as Sousa and others have suggested. Not where I live. Not significantly anyway. The social and communal aspect of listening to music outweighs any negative aspects of the poor sound and imperfect reproduction at most live shows. It’s about being with other people, relaxing, feeling a common bond. Of course we all try and do our best as performers to overcome sound reproduction problems and make the music sound good, it is a constant issue, but maybe it’s not as important as we think it is.

While the fundamental relationship of the audience to live music remains, there have been wholesale changes in professional recording over the past ten years. Even before the proliferation of creative, compositional tools emerged, the ability to make professional recordings had moved firmly into a realm that was accessible to the consumer. While as late as 1996 Frith was still referring to the “disparities of home and studio sound technology,” now huge portions of commercial recordings are recorded, edited, and mixed in homes and apartments (including my own) around the country. The disparity in audio quality between home and studio has almost completely broken down in the last ten years. And along with this we have the recognition of the new dynamic being created by composition techniques wholly based on new technologies—observed here by Jonathan Tankel: “Remixing is recording. . . . It is *prima facie* evidence of Benjamin’s contention that to ‘an ever greater degree the work of art reproduced becomes the work of art designed for reproducibility.’” From here, almost two decades later, I extrapolate further on the Benjamin dictum: the work of art forged from the ever-expanding capabilities of reproduction becomes the work of art created by anyone and everyone. Certainly Benjamin would have approved of this kind of leveling of access to the tools of creation. It is more difficult to imagine how he might have responded to the contemporary blurring of original and reproduction, though his populist tendency would suggest that ultimately he might embrace this as well. Whether he would have ever progressed to the point of finding repurposed audio capable of producing a reproducible aura would involve pure speculation.

Frith acknowledges the power of technology but wishes to place some
limits on its ability to affect musical meaning. He argues that in dealing with the big questions “technology doesn’t so much resolve the politics of musical meaning as change the context—the sense of musical time and space—in which traditional arguments take place, the arguments about the transcendent and the contingent, about the freedom of artistic intention, the freedom of listener response.” At this point Frith warns against going too far with either “technological determinism (machines make meaning)” or “technological fertility (everything now possible),” and his point is well taken. However it leads him to this observation: “What is most startling about the history of twentieth-century sounds is not how much recording technology has changed music, but how little it has. If music’s meaning have changed, those changes have taken place within the framework of an old, old debate about what musical meaning can be.”

It seems to me that Frith opens two questions here, one of musical content and the other of musical meaning. Relative to musical content the very architecture of musical composition is undergoing radical transformations. And yes, the debate is old, but access to the musical experience is broadening exponentially for consumers, as they create more and more of their own musical meaning, and indeed, their own music. As Frith acknowledges, the technology has changed the context. Where I would differ is in gauging the scale of this change. From my perspective, speaking at the beginning of the twenty-first century as opposed to the end of the twentieth, the contemporary context has created startling changes in both musical content and meaning as people with all different types of musical skills participate in the revised musical architecture of the early twenty-first century. Such enthusiasm needs to be tempered by the recognition that we live in a stratified society where access to what might be considered the basic tool of contemporary music making—the computer—is hardly universal, and critical questions of access still reflect the ongoing digital divide created by the economic stratification in contemporary culture (more on this in the following two sections). Nonetheless, as I explore below, the new musical context of participation is reflected in social and communal activities that are enabled by technology.

**GarageBand in Action**

Evidence of consumer use of GarageBand abounds in online forums, user groups, and discussion groups. The usage figures from some of these sites indicate the breadth of activity. The GarageBand discussion group at the
Apple site boasts almost 80,000 messages and about 107,000 “hits.” The GarageBand Users Forum at the Mac Idol site notes: “We have 4,045 registered users. Our users have posted a total of 51,044 articles.” A typical posting sums up the assessment of the program (GarageBand is easy to use), the status (amateur), and the attitude (friendly) of one user who goes by DrasticDragonfly: “I bought GB and you can hear my songs at soundclick.com. I imagine this is what a motivated hardworking amateur can accomplish in a few months with the software. Thanks for reading this post, have a nice day.” These amateur music makers are as interested in sharing their work as the users of MySpace.com are in sharing their musical preferences. Soundclick.com, which is a free mp3 posting site, claims 4,198,057 registered users, who have made 3,967,174 postings to their forums. This site contains commercial as well as amateur mp3 postings for legal download. They don’t list overall numbers but they claim more than 50,000 new songs and 6,000 new bands added to the site each month.

Another typical posting comes from the blogger THespos: “I started messing with GarageBand and couldn’t believe how easy and intuitive it was. A riff popped into my head and I hacked it out on guitar. Within 10 minutes I had drums, bass and a rock organ backing up the guitar riff.” This user goes on to complain about how frustrating it had been when he had tried to use professional audio software and he had spent all his time trying to get everything set up right: “I know this is an entry-level application for recording, but it’s definitely going to help me get a lot of songs out of my brain and onto a hard drive. What I really need is another week off, so I can mess around with this stuff unmolested for hours at a clip.” The frustrations of the “weekend warrior” are clear, but apparently not a deterrent to the creative impulses.

Sometimes posts hint at larger issues, such as the friction between amateur and professional music creators. Here Rolo lays into the group Fort Minor (really the side project of rapper Mike Shinoda from the rock group Linkin Park):

OK, I’m pissed because Fort Minor uses a stock garageband loop in his song “believe me” as the main sound of the song.
If some of us want to use that loop in a song we will be accused by tons of people of copying the guy!
I know he is free to use all the loops he want, but like this [sic] i feel he is taking tools away from amateurs like most of us.
Shame on him!
This amplifies the way the amateurs may be frustrated as they try to clear some creative landscape for themselves. The flip side to the access and connections made possible by Internet communities is the turf wars that are still dominated by commercial interests. When amateurs and professionals compete for attention (as on soundclick.com), the commercial interests will certainly dominate the bandwidth. Programs like GarageBand may provide access to creative tools but competition for creative and commercial space will still favor the big players.

Online reviews of GarageBand reinforce the contention that it is capable of a very broad reach. This reviewer, from synthtopia.com, details the GarageBand features while sounding pretty much like a commercial for the product (much of this probably comes from a company press release, as do many product reviews): “GarageBand turns your Mac into an anytime, anywhere recording studio packed with hundreds of instruments and a recording engineer or two for good measure. It’s the easiest way to create, perform and record your own music whether you’re an accomplished player or just wish you were a rock star.”

It also touts GarageBand’s interconnectivity—increasingly a watchword for product relevance:

One of the greatest things about GarageBand is the way Apple integrates it with other Apple apps. You can make some new background music, and then add it to your iPhoto slide shows, burn it to a CD, or use it as a score for an iMovie and burn it to a DVD. You could grumble that GarageBand doesn’t have some features that pros have come to expect, but it is a minor miracle that Apple has made a music studio that mere mortals can use. This may turn out to be one of Apple’s hottest innovations yet.

Another aspect of GarageBand, and one that might ultimately be the most important to its cultural integration, is its use in the classroom. I found many references to GarageBand as a classroom tool, along the lines of this synopsis from a University of Wisconsin class that trains middle school teachers (so the students in this case are actually teachers):

The students will be learning about the Digital Music program Garageband. They will learn what Garageband is, how to incorporate it into the classroom, and how to use it. The students will be working in small groups at computers. The instructors will lead a short discussion on how to incorporate Garageband into the classroom then give an overview of how to use Garageband. The students will then be given
time to experiment with the program. The lesson will close with an open discussion about the pros and cons of Garageband.67

I received a written account from a colleague who was teaching GarageBand as a summer camp program to at-risk middle school children in San Francisco. His experience was that “GB is pretty understandable for kids” and that they found the basics pretty easy to navigate. I asked him if he thought they would continue to construct music at home after their camp experience and he responded: “Because of the outreach component of the camps, only about 35% of the children have access to garage band outside of the camps. Of this 35%, my take was that they all would be using the skills they got at home.” Although Apple computers do not have a large part of the market share, this nonetheless suggests that access to computers still represents a breaking point in the cultural divide. It also suggests that such access is central to the ability for the underprivileged to break out of the cycle of poverty—music creation being one avenue for the underclass to move into more productive economic conditions. While it is wrong to simply posit computers as the cure for poverty, the use of computers in music construction continues the model whereby access to technology (previously in the form of musical instruments—pianos, electric guitars with amplifiers, and so on, are also complex and expensive) continues to pose obstacles to entrée into the world of music participation. The greatly increased access to recording technology may be changing the paradigm for the vast middle class, but the underclass is still largely cut out from this new participatory model.

My colleague’s broader comment here suggests the ultimate power of programs like GarageBand to both engage children in music creation and change the paradigm of such creation:

My general take on the program is that it enables kids to produce songs at amazing quality and feel good about their creations even though they may have little or no musical experience. Each camp had very different issues and strengths, as did the kids, but they all had something to contribute and were able to see it materialize into something cool.

Even to an experienced musician, the paradox of the new paradigm of music creation is not necessarily apparent. The teacher marvels at how much music is created by these children with “little or no musical experience,” but that is exactly the point. The musical experience now consists of a different set of skills and draws more from the listening experience, without the need for as much traditional music education or music instrument
skills. These children actually had a lot of transferable music experience. Music construction on the computer more closely follows the model of music consumption and becomes accessible to children through basic computer skills such as cut, copy, and paste. This is a reflection of the continuum now stretching from consumption back to creation.

**Whither Compositional Musicking?**

Ivey and Tepper do not explicitly suggest a link between the “curatorial me” and the “Pro-Am Revolution” though they recognize the two as part of the same cultural movement. As argued above I believe the interaction to be significant, that the curatorial impulses are part of what is driving the more explicitly creative activity. Digital technology has broadened the ability to manipulate audio such that these structural connections can be made. Music that is created in GarageBand can be exported to iPod for listening along with one’s library of songs; and songs, snippets of audio, sound effects, or any other sound files can be imported into GarageBand for use in one’s musical construction. In these digital environments there is synergy between curatorial impulses and compositional musicking, both drawing on the desire for creative personal expression.

Ivey and Tepper trace the economic challenges that stifle the emergence of a true cultural revolution in creative production. They suggest that a variety of forces, especially those familiar to many aspects of contemporary economic activity that encourage consolidation and centralization, are creating greater roadblocks for new and emerging artists to find audiences. The nonprofit performing arts organizations “have also narrowed the gates, attempting to maximize attendance and contributions by advancing conservative, repetitious programming choices.” But are these economic conditions truly stifling all of the democratizing potentials of the current milieu? Ultimately Ivey and Tepper ask:

> Who is right? The cultural optimists (a thousand flowers are blooming, we are drowning in a sea of possibility, and we are surrounded by a new creative ethos) or the cultural pessimists (the market is too restricted, people are suffering from a dearth of cultural opportunities, and demands of the new service economy are leaving many workers with little time or energy to engage with art and culture)?

> And they answer “Both sides are right; each sees a separate side of the cultural coin.” That coin represents the age-old divide between the haves
and the have-nots—those with resources and thus access, and those without—resulting in the current division of cultural elites versus the cultural underclass. Finally Ivey and Tepper propose that the challenge today, for educators and artists, is to find a way to broaden that access to a larger segment of the population. The experience of my colleague with the GarageBand summer camp for at-risk children reinforces this notion.

The optimist’s view suggests that we must adjust our notion of musicking as we observe its interaction with the technologies of audio construction. This brings us full circle to the prerecording model of music integration into the foundation of community practices. Are there elements from this model that might be feeding the emergence of a broader spectrum of cultural musicking? Did such models really disappear in the professionalization to an international standard that marked twentieth-century art production? The fact that recordings have become the primary vehicle for music consumption is not as damning to the cultural community as has often been portrayed. Technologies are helping to drive the culture back to some of the traditional cultural models where music is more closely tied to structure, function, and the assumption of participation. Technologies may advance alienation and separation but they may also combine with the human need to support participation and creation. Together they generate new forms of and new opportunities for compositional musicking.

Paul D. Greene also suggests that a “new modality of human music making has emerged” and it is thoroughly wrapped up in the new technologies of sound construction. Rather than the economic dangers, Greene considers the potential negatives of the globalization of musicking that may represent “a worldwide assimilation of music making practices and a dissolution of meaningful distinctions among musics, aesthetics, and practices.” He proposes that what he terms wired sound “is thus culturally and politically charged: listeners and musicians around the world invest sound technologies and studio recordings with anxieties on the one hand, and desires on the other.” The anxieties revolve around a loss of cultural identity, but the desires embrace the expanded opportunities for musicking that technology brings. Ultimately Greene suggests a more positive interpretation of the current tensions created by these worldwide technological practices: “Might assimilation and differentiation both be underway at once?”

Given these new models for musical participation it is appropriate to look more closely at the new models of creativity. The advent of repurpos-
ing has shifted the nature and meaning of the creative musical endeavor, both expanding and blurring its outlines. At the same time, as implied by Greene’s observations, these new creative models have raised questions regarding intellectual property and cultural appropriation. The iPod is built on technology that has also fueled copyright infringement through illegal downloading. Ivey and Tepper suggest that some of the challenges to the “great transformation” that they identify are issues that surround intellectual property. My African folklore project raises questions about music appropriation from other cultures. How might we best evaluate both the positive and negative elements of this process of cultural reinvention? The following section explores these and other questions in the context of cultural practices.