Bytes and Backbeats
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Published by University of Michigan Press

Savage, Steve.
Bytes and Backbeats: Repurposing Music in the Digital Age.

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The Pendulum from Determinism to Social Construction

Determinism is a feature in various social science theories. For example, there is genetic determinism like that represented by one side of the “nature versus nurture” debate, and there is linguistic determinism whereby much of our thinking is understood to be determined by specific aspects of our particular language. Technological determinism often appears as one element in considerations of contemporary music practice. Technological determinism is a reductionist doctrine that, in its most extreme form, holds that a society’s technology governs its cultural values and social structure. Consequently social and cultural changes are seen as led by technology—to use an economic model, this would be the “technology-push” theory, as opposed to the “demand-pull” theory. Technological determinism lends itself to an interpretation that puts technological development largely outside of cultural or political influence.

Opposing technological determinism is the theory of the social construction of technology. This holds that cultural phenomena such as aesthetics, politics, and economics shape both the uses of technology and the path of technological innovation. This theory emanates from the constructivist school of the sociology of scientific knowledge and posits human agency as the primary shaper of technology. This agency operates on the individual level as well as on the broader plane whereby technologies are understood to contain social structures that shape the manner in which they are used. The various arguments I have made regarding the existence and evolution of audio reproduction as manifestations of cultural longing are examples of the social constructionist point of view.
The attempt to balance technological determinism with both cultural and individual agency has been an important element in musicology. While earlier critiques often featured deterministic cautionary tales—from the warnings of the mass-cultural theorists of the Frankfurt School to the famous dictate from Marshall McLuhan, “The medium is the message”—the prominent view in more recent commentary has been to favor the social elements in understanding the position of technology. In regards to music and technology important work aimed at balancing the opposing forces of deterministic theory has been done by Paul Théberge and Timothy Taylor.

I embrace the views that favor social construction of technology, while acknowledging certain deterministic characteristics that technologies carry somewhat independently. However, the situation in contemporary music renders much of this discussion moot. Contemporary audio construction in the digital realm is so complex that it masks many of the elements and processes that are a party to the final audio program, thereby making judgments about the balance of deterministic forces impossible. As the technology becomes more complex the processes involved in music creation are increasingly lost in the music itself: This complexity argues for the kind of application and studio studies I undertake in this work.1 Earlier relationships between technology and music creation or performance could be pretty transparent—such as that described by a person composing or performing at the technological wonder called the piano. Earlier composition, performance, and consumption models of all kinds are more easily traceable to technological elements such as historical series of scores, specific musical instruments, and particular reproduction technologies.

Thomas Porcello recognizes that while at one time recordings represented the fixing (in the sense of permanency) of a performance that was originally understood to be inviolable, currently “Reworkings of all kinds are increasingly, of course, a staple practice of popular music production and consumptions, as well as a driving force behind audio technology design and development.”2 He then asks whether “the shift from analog to digital recording has hyperbolized a process that was already underway before its advent.”3 My simple answer, expanded over most of my work here and understood under the terminology of “repurposing,” is an unequivocal yes.

Outside of academia the weighing of this tension between determinism and voluntarism (individual agency) continues to frequently lean more toward the pessimism of a deterministic viewpoint. New Yorker music critic
Alex Ross wrote a 2005 article for the magazine titled “The Recording Effect: How Technology Has Transformed the Sound of Music” and the title itself suggests a deterministic position, though in the article he presents a fairly balanced viewpoint between what he terms the “party of doom” and the “technological utopians.” Ross’s piece draws from recent academic works that promote the social constructionist point of view and place agency in the pivotal position of control, a view summarized by Ross: “The machine is a mirror of our needs and fears.” But Ross concludes his essay by suggesting that “The fact that the Beatles broke up three years after they disappeared into the studio, and the fact that Gould died in strange psychic shape at the age of fifty, may tell us all we need to know about the seductions and sorrows of the art of recording.”

I wrote to Ross and complained of his rather pessimistic and deterministic concluding remarks. I suggested that on behalf of the countless musicians for whom the contemporary recording environment is a wonderland of musical opportunity I would have hoped for a different ending for his piece. He responded with an apology for his “doomy” final words:

Sometimes the piece simply ends of its own accord, as if it has a mind of its own. Recording is a subject on which it is very easy to go round in endless circles and this is simply the particular point on which I chose to stop. Perhaps I was just in a bad mood that day! I hope I made it clear in the piece that there is really no hard answer to any of these questions.

Examples of technological determinism are found in relation to all contemporary media. In a 2007 article, also in The New Yorker, the film critic David Denby expresses a deterministic attitude toward movie technology. In Denby’s celebration of the movie theater the primary attributes of the experience emanate from the screen itself: “The movie theatre is a public space that encourages private pleasures: as we watch, everything we are—our senses, our past, our unconscious—reaches out to the screen. The experience is the opposite of escape; it is more like absolute engagement.”

This judgment is based on a historical relationship to movie technology and the movie experience. It is a socially constructed form of nostalgia that reads as determinism. The hidden message in many expressions of technological determinism is nostalgia. Ultimately, even the most mildly stated views of technological determinism must be understood as historically contingent. It is social construction that forms much of the response to technological qualities even though there appear to be qualities of the tech-
nology that are independent. For example, listening to an iPod may be an isolating experience; however, the response to that “isolation” is socially and historically constructed (and users have found communal iPod strategies such as sharing earbuds and playlists). Had the digital experience, which Denby rails against, preceded the analog experience, what would the claims about the inherent qualities of various platforms be? Denby also bemoans the movie theater’s diminishing presence in the culture and claims that “No exhibition method is innocent of aesthetic qualities. Platform agnosticism may flourish among kids, but platform neutrality doesn’t exist.” It’s true that technologies contain aesthetic elements—they are not neutral—but our response to them is not neutral either. It is, at least in part, socially constructed rather than embedded in the technology.

So is the contemporary kid really “platform agnostic”—or are they simply accepting the various platforms offered on a neutral basis? Will they ultimately develop the same kind of nostalgia for the dominant paradigm of their youth at some later point in their life? Will they bemoan whatever the platform used by their children? Perhaps they will even condemn it as isolating when set in contrast to their iPod experience, which they shared with their friends via docking stations, iTunes libraries, links on their MySpace page, and so forth. Certainly the technology influences the aesthetic experience—it is not agnostic in the absolute sense—but the meaning attached to the quality of experience is inseparable from the social construction.

The Network of Audio Presentation

Various deterministic arguments regarding specific recording technologies may be countered with a more complete understanding that emphasizes voluntarism and in the process suggests a network of reciprocity between technology and agency. In critiques of the early evolution of sound recording the simple manifestation of the complex relationships required for innovation and invention is credited with an outsized authority. Thus, what Sterne calls “impact narratives” such as “The telephone changed the way we do business” or “The phonograph changed the way we listen to music” belie a deeper relationship between technological advance and the larger cultural context that includes “material, economic, technical, ideational, practical, and environmental changes.” The deterministic and myopic impact narrative is characterized by an incomplete notion of causality. These machines represent the tangible manifestations of complex relation-
ships, but they are the result of an intricate mixture of cultural, social, and physical activities. The technologies did not just develop willy-nilly, leaving various capabilities in their wake. They were in part the manifestation of human desire—wishes that innovation, invention, and the network of interaction translated into devices capable of the reproduction and manipulation of sound. All of this suggests the ways that audio recording technology is intertwined with the creative activity that produces art, though it might typically be classified as artifice or even as a kind of deception.

The effects of the cultural desire for sound reproduction are also apparent in the social organizations that were developed around the early technologies. As people strove to create more accurate reproduction they also altered the source material to make it more suitable for reproduction. One could argue that this began with the very first recording. Edison may have chosen “Mary Had A Little Lamb” because it would be easily recognizable through the noise and low fidelity of the reproduction. Contemporary singers are trained in microphone technique, and instrumentalists are trained to play less dynamically for studio recordings to help maintain consistent recording levels. Reciprocity is essential in the interaction between an original and its duplication—it is a two-way street. The hierarchy of source and copy is mitigated by recognition of the reciprocity. This suggestion of hierarchy in source and copy is an outgrowth of the nineteenth-century concept of individual creativity, both ideas sourcing a monological concept of authority. Rather than as hierarchy, production and reproduction are better understood as mutuality—with a commonality of cultural interaction. Early recordings focused on distinct audio events such as speeches partly because of the simplicity of the audio source. Musical recordings were selected and even arranged with the same sonic simplicity in mind, in part responding to technological demands, such as the need to be able to position all of the musicians close to the recording horn. The recording studio is itself an artifact of the desire to create “originals” most suited to reproduction. These are the same motivations reflected in the desire to “fix” contemporary audio—to make it more “listenable” by contemporary standards. Whereas previous generations focused on alterations in fidelity and performance in order to create what were considered to be higher quality recordings, contemporary practice focuses on manipulating the already recorded sounds: “the drive to achieve ‘fidelity’ in recording involved a clash of cultures, and the combination of science and aesthetics pulled recording technology in different ways. In the end, the use of technology to preserve elite culture became
less important than the technological manipulation of sound to produce popular culture.”

It is the recordist who is at the center of these sound manipulations that are essential to the production of popular music culture. Many, including Toynbee, seem to have focused on the negative influence of recordists as part of the networking of reproduction: “musicianship is at odds with the values of the engineer.” Jacques Attali bitterly attacks the networking process that he believes has made musicians complicit with the sound engineer’s concern for “the clinical purity of the acoustics,” turning it into a new aesthetics that robs music of its energy, making it into “information free of noise.” But both arguments fail to recognize the connection between the evolution of studio production and the creative process. The network of popular music creation blurs the roles of recordist, musician, and composer. The performer is becoming the technician and in doing so is becoming the composer and more specifically the recomposer. And though this may mean fixing and manipulating further toward so-called perfection, that in itself might be seen as a compositional aesthetic. Sometimes that compositional aesthetic incorporates plenty of noise—noisy old samples and loops of old performances and the like, placed together with “perfect” drum machine parts and pitch-fixed vocals. It is as brave a new world of composition as Attali hopes for later in his work, but not in opposition to the aesthetic of the sound engineer that he decries. Instead it comes through the evolution of the work of the recordist, through the integration of performance and composition with the technical aspects of creating sound.

In general terms, as Lysloff and Gay argue, “technologies become saturated with social meaning as they acquire a history of use.” When technologies are interfacing with the creative arts this social meaning may find itself in conflict with much more deeply embedded social conceptions. As Tim Warner notes, the networking of musical creation may stand at odds with deeply ingrained notions of the artist: “The transposition of the Romantic notion of the artist as inspired individual into popular culture is undermined by the reality of pop music production, which is almost invariably the result of teamwork.” The breakdown in these traditional musicological conceptions involves more than simply embracing the fact of the network of musical functions that began in popular music production but which now encompasses musical creation in all genres. And the networks of function encompass more than technological mediation, the whole notion of creativity must now expand to include group work. This
lifts creativity to a truly collaborative status—beyond the hegemony of the individual and beyond the notion of intertextuality that acknowledges outside influences. At the same time, technology itself has created its own mythologies that color the evaluation of current musical practices.

**Analog and Digital: Which Is More of a Copy?**

Musicology struggles with notions that have become ingrained within thinking about the technologies of recording. The network that forms the social process of sound reproduction creates reciprocity between all the elements so that even the distinction between original and copy begins to dissolve. These relationships continue to break down the dichotomy between art and artifice and, to some extent, they are reflected in the contemporary debate over analog and digital recordings.

Since the advent of the CD and its eclipsing of the LP and the cassette as the primary delivery medium for commercial music, professionals and consumers have debated the relative merits of the two technologies. From a convenience standpoint there is little doubt that the CD is vastly superior, and it is much more robust in terms of reliability as well. But what about sound quality? Which sounds better, digital or analog? Here, of course, subjective judgments abound and opinions vary widely. In the early days of the CD one often heard complaints that digital sounds “cold and brittle” whereas analog sounds “warm.” On the other hand some argued that digital sounds “clear and accurate” whereas analog sounds “cloudy and noisy.” Technically there is a difference and it may be audible, though there is so much variation between different digital or analog reproduction technologies that it may be very difficult to distinguish between the effect of those technologies and the quality of the sound of the digital and analog source material. Regardless, the differences in judgment regarding sound reproduction are so historically contingent and so culturally based that meaning cannot be reduced to technical terms.

There are those who have argued for an ontology that separates the status of recording elements and they have made value judgments regarding digital audio technology as a result. Rothenbuhler and Peters in “Defining Phonography” argue that analog recordings “contain traces of the music [and therefore] there is an unbroken chain from the sound in the living room to the original sound as recorded.” This results from the physical relationship between the analog production of sound by the performer and its analog recording. They argue that because digital recording is removed
from the physical or vibrational quality of the source, it is ontologically more distant. This analysis points to facts regarding digital recording technology, but this is only one way of understanding sound—one that bypasses the many shifting cultural referents, and that is not sufficient to grant analog and digital recording an ontology of their own. One might come to an opposing viewpoint by arguing essentially the same point—that there are inherent positive or negative qualities in the technologies themselves.

Andrew Goodwin, in his essay “Sample and Hold: Pop Music in the Age of Digital Reproduction,” does just that, and thereby makes the same error while arguing the opposing viewpoint. He claims “digital recording techniques now ensure that the electronic encoding and decoding that takes place in capturing and then reproducing sound is such that there is no discernible difference between the sound recorded in the studio and the signal reproduced on the consumer’s CD system.”¹⁸ He believes that this represents something new: the mass production of the aura, which is an unexpected but nonetheless fatal blow that confirms Benjamin’s supposed prediction of the death of aura. That is, the supposed “aura” of the original is further debased by “the fact that everyone may purchase an ‘original.’”¹⁹ By ignoring the social dynamics of the process, he credits an artifact in the evolution of fidelity with an essence that suggests an ontological status. Though this argument grants a quality to digital recording that is the opposite of the one ascribed by Rothenbuhler and Peters, it fails for the same reason. Sound reproduction can have no essence outside of its interaction with its culture and its time.

Goodwin extends the reach of digital audio reproduction all the way to the point of crediting it with “the capacity to break the barrier between the original and the copy.”²⁰ Again, this is an ontological assertion that falters under both technical and cultural scrutiny. The network of reproduction provides a much more subtle and complex relationship between original and copy, but the distinction between the two can never be completely removed. Technologically speaking the allure of digital has already been proven to be at least flawed in terms of fidelity—see Rothenbuhler and Peters above. Culturally the network itself describes the separation between original and copy at the same time as it defines the interrelationships. The unique status of original and copy is assured, but so is their close association.

In The Recording Angel Evan Eisenberg notes that “perfect preservation is a matter not simply of technology, but of ontology as well.”²¹ Perhaps so, and perhaps because perfect preservation is not possible, we are forced to
leave an essentializing ontology out of the picture. Instead an ontology that recognizes historical contingencies is the appropriate model for understanding the nature of recordings.

**Meaning and Musical Accuracy**

Musical meaning changes over time; it is historically contingent rather than universal. Just as musical meaning is not inherent, so the relationship of recording to what is reproduced is culturally connected, and cultural value may be located in the mediation itself. This ongoing interaction between music and culture applies to “fixing” as well as to more traditional kinds of musical construction. How we hear “fixed” audio is, at least in part, a response within a historical context. Certainly the sense of musical “stability” that results from harmonic relationships refined by Auto-Tune and the emotional impact of “perfect” drum parts are both moving targets. As musical “fixing” becomes more pervasive the notion of artifice become further entrenched in most contemporary expressions of the art of music.

As Tia DeNora points out (referencing Hennion), there is a basic problem if one is “finding in the ‘music itself’ the very things analysis has reflexively brought to bear on it” because there is no such thing as “music itself.” Analysis itself is creating content, and thus the “value, authenticity, meaning and effect” are interesting, not as any kind of intrinsic quality, but in terms of how they are identified or referred to by others. This again speaks to the cultural connectedness and hence the historicity of musical meaning, to its existence as a human construction and not as a natural phenomenon. “Simply put, a sociology of musical effect cannot presume to know what music causes.” I would add the same caveat for the effects of musical “fixing.” The pendulum has already swung widely in acceptance of the kind of fixing I detail in the previous production studies.

What then can be said about musical meaning? For Pacey nature itself may be better understood through music: “There is in nature an element of the spontaneous and the purposive such as we also experience in music.” He also uses the musical experience (in this case of Bach) as an analogy for the way we may participate in technological development: “in such music, then, experience of regular, predictable, caused events coexists with perceptions of spontaneous, exuberant change, and perhaps of purpose.” These sweeping generalizations may resonate on a human level while avoiding the kind of overreaching inherent in analysis that seeks to connect specific musical constructions with similar levels of human response.
Just as Pacey’s experience reflects this broad interaction between technology and music, so is it mirrored in the experience of music reproduction and manipulation. Recording technologies affect our musical experience in ways that may not be separable from the music itself. In fact, some argue that creation of a sound landscape through manipulation of the sounds has overtaken attempts at accurate reproduction of musical performance such that “production values are at the core of the aesthetic.” By the same token, the application of sonic manipulation obscures the distinction between “natural” musical sounds (acoustic instruments) and their electronic counterparts as a result of all the processing. For example Théberge notes that “the difference between the sound of processed acoustic drums and their electronic counterparts can be quite negligible.” Thus recordings symbolize rather than imitate performances, while at the same time standing on their own as musical artifacts. Clearly these qualities of sound affect the experience, and like the specifics of the musical expression, they enhance but do not define the meaning.

As technology has advanced the recording process, and ultimately yielded the ability to manipulate audio to the extent described in the application study above, the relationship between technological effect and musical performance, between artifice and art, now becomes hopelessly blurred. The expectation is changed by the technology, which is in turn changed by the expectations (desires) of human agency, driving the creation of new technologies. Similarly the cycles of what is taken for De-Nora’s “value, authenticity, meaning and effect” follow this shifting cultural relationship to the technology of “fixing.” Adorno argues for the unintended effect of artificiality as a positive influence on the sense of humanity in a recording—as described by Slavoj Žižek:

In “The Curves of the Needle,” a short essay on the gramophone from 1928, Adorno notes the fundamental paradox of recording: the more the machine makes its presence known (through obtrusive noises, its clumsiness and interruptions), the stronger the experience of the actual presence of the singer—or, to put it the other way round, the more perfect the recording, the more faithfully the machine reproduces a human voice, the more humanity is removed, the stronger the effect that we are dealing with something “inauthentic.”

While Adorno may be seeking relief from what he considers an essential flaw in all recordings, pop music icon David Byrne acknowledges something related regarding contemporary music production: “There’s nothing
naturalistic about it. Hasn’t been for years. In fact, sometimes there’s an obvious pride in creating something that is profoundly un-naturalistic, completely artificial sounding.” The difference here is the assumed acceptance of the entire process of creative artifice. Per Adorno we are reassured by the obviousness of the artifice, whereas for the contemporary listener we are stimulated by it. “Fixing” provides a similar level of reassurance for the listener in acknowledging the humanity of the producer’s influence. The awareness of “fixing” is a part of this valued construction of production. We are both reassured and stimulated by it.

Relativity and Authenticity

The historically contingent nature of music appreciation is made apparent through the lens provided by reproduction. It is clearly illustrated in one of the earliest recordings. A 1902 recording of the last known castrato—Alessandro Moreschi—provides ample evidence:

That the practice and tone of Italian solo singing can have changed so dramatically in under a century, so that what was then considered breathtakingly beautiful, subtle and stylish, should to our ears sound like an appalling caterwauling, as if the act of castration were actually being performed during the recording session, is a sobering warning for all musicians currently engaged in the re-creation and study of “authentic” music performances. Cycles of acceptance and rejection, of praise and scorn, of respect and ridicule have been repeated many times in the short history of mechanical reproduction. John Philip Sousa and others who disdained recording altogether, only to release recordings within a few years of claiming them worthless, mark the constantly shifting relationship that Lawrence Levine chronicles in Highbrow/Lowbrow. A more contemporary cycle, driven by the effects of recordings themselves, was already noted in the progression from ridicule to widespread acceptance of the drum machine in popular music production.

Understanding the evaluation of music in this way suggests that the word authentic is a problematic musical qualifier. One of the dictionary definitions is “not imaginary, false or imitation.” This sense of the word is irreconcilable with the subtleties of historical influence that are apparent in the study of recordings. Authentic music must then be somehow free of imitation—but if musicology has done anything it has at least shown that
such a state of “pure” music is impossible. The dictionary also provides these examples of usage for the word: “an authentic colonial home” and “an authentic reproduction of a colonial home.” Under these guidelines the word authentic may either contain or exclude the idea of imitation. In musical terms this may be thought of as either original (not imitative) or as a part of a musical tradition (a form of imitation). When used in order to pass judgment on musical expression, as the term authenticity often is, this could cause one to confuse the sense in which music may be both original and derivative at the same time. This may be most obvious in the repetition of the standard repertoire of concert music or in an artist’s version of another writer’s song, but music is always a blend of originality and imitation. Thus the term authentic, when used to describe musical performance or recording, must be used as a relative concept—more or less authentic, yes, but simply authentic, never. For example, a particular recent recording might be said to be a relatively more authentic evocation of, say, 1930s big band jazz, than some other recent recording. This kind of relative scaling and specific reference is necessary to sufficiently qualify the sense in which the word authentic is being used.

The power of the recording itself may be seen in a political context, and therefore moves musical performance beyond any notion of musical authenticity. As with the rapid acceptance of drum programming, the power of reproduction itself may create cycles of credibility. Jacques Attali traces this kind of power to the earliest of reproductions of the word:

Recording has always been a means of social control, a stake in politics, regardless of the available technologies. Power is no longer content to enact its legitimacy; it records and reproduces the society it rules. Stockpiling memory, retaining history or time, distributing speech, and manipulating information has always been an attribute of civil and priestly power, beginning with the Tables of the Law. But before the industrial age, this attribute did not occupy center stage: Moses stuttered and it was Aaron who spoke. But there was already no mistaking: the reality of power belonged to he who was able to reproduce the divine word, not to he who gave it voice on a daily basis. Possessing the means of recording allows one to monitor noises, to maintain them, and to control repetition within a determined code. In the final analysis, it allows one to impose one’s own noise and to silence others.

Powerful, yes, and Attali suggests the powers of reproduction that apply far beyond the musical experience. Those experiences may be
influenced by outside factors; they are forever being altered by technological, cultural, and historical variations in their presentation, but ultimately musical recordings yield nothing more profound than the individuality of the experience of musical performance. In the twenty-first century the meaning of musicianship is undergoing some fairly radical redefinitions as it is heavily filtered through its interaction with technology, but the inappropriateness of a historical claim to authenticity remains.

It may be helpful to be reminded that even the experience of the auditory sensation is now recognized as hopelessly intermixed with sensations in general. Oliver Sacks tells us: “There is increasing evidence from neuroscience for the extraordinarily rich interconnectedness and interactions of the sensory areas of the brain, and the difficulty, therefore, of saying that anything is purely visual or purely auditory, or purely anything.” Similarly, we must put to rest any notion of musical authenticity that is in any way absolute or undiluted.

**Auto-Tune Is a Musical Instrument**

In the introduction to this book I reference Brian Eno’s call to consider the studio as a musical instrument, and later, in a different context, I will note Paul Théberge’s observation regarding the transformation of the turntable into a musical instrument. I imagine that the notion of what constitutes music creation has been challenged by the introduction of new musical instruments from prior to the time of written history. One might be surprised then by the cultural resistance to new musical means of expression, but this would be to underestimate the strength of cultural norms and the power of nostalgia. “The introduction of new technologies and instruments provides a way of probing and breaching the often taken for granted norms, values, and conventions of musical culture.” This observation from frequent writers about technology Pinch and Bijsterveld is followed by the observation that “the significance of any individual instrument has been dwarfed in the 20th century by the dramatic changes in the way that music is recorded, stored, and consumed.” I agree with both assertions, and the second statement should be extended to include the notion that what constitutes a musical instrument is intertwined with these dramatic changes to the way contemporary music is created.

Studio technologies and musical instruments are now linked together as never before, further expanding the notion of what constitutes music expression. This is one step beyond Eno’s notion of the recording process
as a partner in music creation and challenges the notion of music in ways well beyond the question of what constitutes a musical sound. Just as I have argued for the blurring of roles in the creating of music, we are now witnessing the blurring of functions between technologies intended as transparent tools of production and those intended as musical instruments. As new territories are explored, the tension between art and artifice often returns to center stage.

Ever since its introduction Auto-Tune has been controversial. I chronicled its use on a specific project in chapter 1 and noted its widespread application as a means of “fixing” the pitch of vocal performances. “Right now, if you listen to pop, everything is in perfect pitch, perfect time and perfect tune,” says producer Rick Rubin. “That’s how ubiquitous Auto-Tune is.” In a spate of recent high-profile magazine articles this legacy of Auto-Tune is recounted in a fashion of which the following is typical:

Most of the time, Auto-Tune is used imperceptibly, to correct flat or sharp notes. The New York producer Tom Beaujour, who records rock bands that sound nothing like contemporary R. & B. or pop, says that it gets used, in one way or another, in almost every session that he works on. Often, it solves logistical problems: an artist has left the studio and has no opportunity to return just to re-sing one or two off notes.

However, recent widespread news reporting about Auto-Tune has been primarily motivated by the success of the work done by the rapper T-Pain, who has used Auto-Tune in a very dramatically apparent way—as a musical instrument really, rather than as a tool to fix vocals.

Something similar to the effects being explored by T-Pain had been done previously (and famously) using Auto-Tune on a 1998 track from Cher (“Believe”) but it had received such negative attention that there hadn’t been much use of Auto-Tune as a compositional tool—an instrument of sorts—until the emergence of T-Pain in 2005. Since then many well-known artists have used Auto-Tune in this much more apparent fashion, recomposing their vocal performances in ways that would be impossible for a singer to do with the natural voice. The transition from transparent production tool to T-Pain’s work is called “ironic” by a writer for the Washington Post, but where is the irony? Is it ironic because the tool has been used in ways that it wasn’t originally intended to be? Is it ironic because we expect behind-the-scenes studio manipulation but have more trouble accepting obvious sonic manipulations? It is surprising but the
“meaning” of this use of Auto-Tune is intended. Rather than ironic this is typical of human agency doing the unexpected with technology. It is emblematic of the never-ending progression from the vilified to the integrated in new forms of musical expression. The variety of views expressed in the magazine articles indicate that we are somewhere in the midst of this process now—still maligned in some corners but increasingly accepted by artists and audiences. This represents a recent progression that is similar to the one I chronicled elsewhere in this book in regards to drum machines and iPods. Each of these narratives constitutes some of the probing and breaching of musical conventions suggested by Pinch and Bijsterveld.

As also noted previously, the popular press tends toward the deterministic even as cultural critics have migrated heavily toward the cultural construction of technological effect. Some of the commentary on T-Pain’s use of Auto-Tune attempts to have it both ways at once, disparaging the process as gimmick while in the same breath granting it creative significance: “Auto-Tune is the rare gimmick that can lead to innovation.” Yet that same writer, in *Time* magazine, hits a firmly deterministic and pessimistic note about the effect of the originally intended and widespread use of Auto-Tune: “It’s hits that matter, and the average person listening to just one pop song on the radio will have a hard time hearing Auto-Tune’s impact; it’s effectively deceptive. But when track after track has perfect pitch, the songs are harder to differentiate from one another—which explains why pop is in a pretty serious lull at the moment.”

This is quite a leap of deterministic thinking—damning the entire state of pop music on the basis of a very specific technological effect. But it isn’t just the critics who are jumping on the anti-Auto-Tune bandwagon. At the Fifty-first Grammy Awards the band Death Cab for Cutie wore blue ribbons on their sleeves to protest the use of Auto-Tune. This would seem to me to be rather self-serving and narrow-minded thinking. Perhaps the band would like all audiences to yield to their “alternative” and “authentic” sound, but is the perceived failure of contemporary pop to be distinctive or innovative or “authentic” to be laid at the feet of Auto-Tune? Or for that matter is there any justification in seeing it as a particularly contemporary issue, rather than a part of the endless cycle of pop music’s thesis and antithesis, innovation and recapitulation? As I indicated in describing the use of Auto-Tune in chapter 1, there are clear examples where Auto-Tune may allow an artist to salvage an extraordinary performance (though of course the definition of “salvage” may be at issue). Many artists and recordists consider Auto-Tune to be an essential part of the creative process. And
these questions only speak to issues regarding Auto-Tune when used in accordance with its initial intention. What about T-Pain and Auto-Tune as musical instrument?

Vocal effects created by external technologies have been around for quite awhile, from the Voice box (used famously by Peter Frampton to make his guitar sound like a voice) to the Vocorder (used by many electronica artists as well as Pink Floyd, Prince, Madonna, etc., and employing similar technology to Auto-Tune). So why is the current use of Auto-Tune receiving so much attention? The writer from the Washington Post contrasted responses to T-Pain’s success with recomposed vocals via Auto-Tune in this way: “some purists saw [it] as yet another sign of the digital-music apocalypse. The alternate view: Making your singing voice sound like a Speak & Spell that’s been submerged in a bathtub is no different from a guitarist using a wah-wah pedal to tweak the timbre of an instrumental line or a whammy bar to bend the pitch of a note.”

The New Yorker critic Sasha Frere-Jones speaks directly in favor of this alternate view. He minimizes the significance of what is being created by Auto-Tune, noting that “there is nothing natural about recorded music” and that “T-Pain’s deployment of Auto-Tune is a similar assertion of self, no different in kind from the older, more traditional tricks of tape-splicing, double-tracking the voice, and adding a little reverb.” Here I disagree. No different in intention than the technologies mentioned by Frere-Jones, and certainly an assertion of self, but indeed different in kind. Frere-Jones’s “more traditional tricks” of pop music production never call into question the fundamental nature of vocal production. Other experimental techniques have done so (vari-speeding vocals to produce wild, unsingable effects, for example) but in popular music the essential “realness” of vocal production, even when tweaked for pitch accuracy by the normal-functioning Auto-Tune, has never been challenged in any mainstream and widely accepted recordings. The Auto-Tune of Cher and T-Pain, and their successors, opens new doors to the creative expression of vocal melody in the same way that drum machines and sampled loops have in rhythm construction—and the same cycle from derision to appreciation to admiration is in evidence.

The contemporary landscape is littered with conflicted ideas regarding the vast new horizons of music creation, as well as with the notions of musical “fixing” and performance “cleansing.” Although these new capabilities seem radical—and they are new—it is not difficult to imagine a future when even much greater degrees of control over subtle elements of musi-
cal performance become available. Technologies that model all different kinds of performance subtleties including vocal resonance and timbre have already appeared. Along with these practices will come the aesthetic reactions to technologies, such as we see in certain popular music lo-fi recording aesthetics and in genres such as bluegrass that emphasize acoustic music and naturalistic recordings of live performances. Today’s cultural terrain can accommodate many aesthetics at the same time, but the dominant trends in popular music suggest a continued reliance on the current flood of technology. Rap, hip-hop, alt rock, and even so-called world music ride the waves of technology and artifice that include Auto-Tune, Beat Detective, and DeBreath. Most of contemporary popular music presentation is the result of a process of construction, where music is built from all different kinds of materials, both new and repurposed. The house that music lives in is continually subjected to add-ons and additions; new furniture is moved into existing rooms, and old furniture is repaired to spiff up the environment. The musical house is repaired and scrubbed to meet contemporary living standards. What might be considered artifice—but what is better defined by a less pejorative term such as construction—becomes an increasingly pervasive tool in the production of music. What the musical model home of the future will sound like is, as always, unknown.