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Abstract

While studio recordings can resemble live performances and draw upon similar reserves of knowledge and skill, the processes and experiences of performing in the studio are notably different from being on stage in front of an audience. This chapter situates performance within the technological trappings of the studio and its associated social and musical processes, which are now so prevalent in contemporary musicianship. The chapter draws upon ideas from *ontology* (in terms of how recording modifies the forms of music's existence), *sociology* (in that the process of making recordings demands a consideration of the social constructs at play between collaborators), *affordances* (to describe how people and the material aspects of the studio and its apparatus are entwined in a productive relationship), and *poetics* (which relates the process of making to the specific conditions of that moment). To draw out the practical implications of the discussion, four proposals are offered, which encourage: (1) a recognition of the similarities and differences between live and recording performance contexts; (2) an understanding of the ideological underpinnings of why a recording is being made; (3) an acknowledgment of the productive effects of technology; and (4) an admission that recordings construct an illusion of some kind of reality.

Keywords

studio, recording, technology, ontology, sociology, affordance, poetics

# Chapter 21

# Performing in the Studio

Mark Slater

## Introduction

While studio recordings can resemble live performances and draw upon similar reserves of knowledge and skill, the processes and experiences of performing in the studio are notably different from being on stage in front of an audience. The broad sweep of technological development since 1877 has given rise to increasingly powerful and prevalent devices that facilitate the capture of music in increasingly diverse settings. These developments have impacted upon music and its associated practices from all angles, including performance. Such technologies are not passive objects painted into the scenery of music's story; they have been entangled with music in a complex plot that has changed music in all its aspects—sonic, stylistic, social, artifactual, economic, political, and institutional. Reciprocally, the demands of music making throughout the technological era have nudged the trajectory of technological development.

Every recording that exists is an example of a recorded performance in some way. Whether that involves playing musical instruments individually or as an ensemble, triggering drum pads for a remix, sequencing synthesizers and samplers for a soundtrack, shaping the dynamics of sound through compression and equalization, or editing audio on tape or using a digital audio workstation, any conceivable way that musicians might interact with technology to create a recording is arguably a form of performance. The diverse ways that recordings can now be made, the prevalence of the recording process in contemporary musicianship, and the blurring

of roles within this whole process underpin the ideas put forward here. Rather than analyzing individual recorded performances or offering technical how-to advice, this chapter situates performance within the technological trappings of the studio and its associated social and musical processes.

To begin, two ideologically opposed cases are introduced, leading to a consideration of key ideas in the field by way of poetics and assemblages; questions about who and what is performing will then be addressed followed by a consideration of the studio environment replete with its tools, objects, and materiality. The final section outlines four proposals relating to the practical implications of the discussion, which encourage: (1) a recognition of the similarities and differences between live and recording performance contexts; (2) an understanding of the ideological underpinnings of why a recording is being made; (3) an acknowledgment of the productive effects of technology; and (4) the necessary admission that recordings construct an illusion of some kind of reality.

## The Gould-Drummond Axis

In 1964, Glenn Gould renounced the concert hall and declared he would, from then on, only make recordings. For him, the opportunities heralded by the rapidly improving recording technologies of the time signaled the impending death of the concert hall. Having toured extensively on the international circuit following his debut in 1946, Gould regarded the concert experience as "degrading and humanly damaging" (Gould & Page, 1981, p. 452). Recording offered rich aesthetic possibilities that could not be matched in the fragile immediacy of the concert experience:

> [T]he young pianist, then thirty-one years old [. . .] was tired of what he called the "non-take-two-ness" of the concert experience—the inability of a performer to

> correct finger slips and other minor mistakes. He pointed out that most creative artists are able to tinker and to perfect, but that the live performer must re-create his work from scratch every time he steps onto a stage. (Page, 1984, p. xii)

In 1962, Gould presaged this position when he wrote that "the most efficacious step which could be taken in our culture today would be the gradual but total elimination of audience response" (Gould, 1962, p. 246). In an article for *Piano Quarterly*, Gould recounts a memorable broadcast for the Canadian Broadcasting Corporation in December 1950 during which he performed sonatas by Mozart and Hindemith. Afterwards, Gould was gifted an acetate disc of the performance.

> [E]ven today, a quarter-century after the fact, I still take [it] down from the shelf on occasion in order to celebrate that moment in my life when I first caught a vague impression of the direction it would take, when I realized that the collected wisdom of my peers and elders to the effect that technology represented a compromising, dehumanizing intrusion into art was nonsense, when my love affair with the microphone began. (Gould, 1974–1975, p. 354)

In an interview with Tim Page in 1981, Gould summarized his position in relation to recording technology and live performance:

> [T]echnology has the capability to create a climate of anonymity and to allow the artist the time and the freedom to prepare his conception of a work to the best of his ability, to perfect a statement without having to worry about trivia like nerves and finger slips. It has the capability of replacing those awful and degrading and humanly damaging uncertainties which the concert brings with it. (Gould & Page, 1981, p. 452)

Though his prediction about the death of the concert hall has not come to pass, Gould's challenge to the establishment of music practice is formidable. Indeed, Gould (1966) was fully aware that to "reckon with [the concert hall's] obsolescence is to defy the very body of the musical establishment" (p. 333). The concert hall, at the time Gould was writing, was emblematic of the musical establishment's values in the way that performances in such spaces propagated a masterwork mentality along with the perceived qualities of coherence, organicism and authenticity. In his essay "The Prospects of Recording," Gould discusses splicing in relation to the perceived infringement on the supremacy and coherence of an artist's utterance that some considered to run so counter to the in-the-moment, in-person authenticity of concert hall performances. In recounting the process of recording Bach's fugue in A minor from the first volume of *The Well-Tempered Clavier*, Gould testifies to the transcendental possibilities of recording through the act of editing. In his account, takes 6 and 8 had markedly different approaches to articulation—one strident and severe, the other jubilant—but, surprisingly, both had the same tempo, which allowed them to be spliced. Such a version emerged as a result of the speculative process of recording: "By taking advantage of the post-taping afterthought, [. . .] one can very often transcend the limitations that performance imposes upon the imagination" (p. 339). Recording processes present the possibility of transcending received tradition to achieve new interpretative insights.

Gould's embrace of the rich potential of recording technology and outright rejection of live performance marks out a clear ideological position. The opposite pole is represented by Bill Drummond, who rejected recording technologies in favor of the unrepeatable immediacy of live performance. Drummond had worked in the popular music industry from 1977 as an artist and in

business roles, but by 1992 had reached the end of the road with making that kind of technologically mediated music:

> The very urge to make recorded music is a redundant and creative dead end, not even an interesting option, fit only for the makers of advertising jingles, ring-tones and motion picture soundtracks. The sheer availability and ubiquity of recorded music will inspire forward-looking music-makers to explore different ways of creating music [. . .] and the very making of recorded music will seem an entirely two-dimensional 20th-century aspiration to the creative music-makers of the next few decades. (Drummond, 2008, p. 5)

Drummond's personal journey led him to reject the stylistic, technological, and commercial imperatives that had dominated his practice up to that point, which he symbolized potently with his renunciation of recording. In 2003, Drummond made his position clear by serving the following notice:

> All recorded music has run its course.
>
> It has all been consumed, traded, downloaded, understood, heard before, sampled, learned, revived, judged and found wanting.
>
> Dispense with all previous forms of music and music-making and start again.
>
> (Drummond, 2008, p. 3)

The ubiquity of recordings demonstrates, for Drummond, the cheapening and diluting effects of capitalist commodification. Recordings are symbols of consumerist excess devoid of any capacity for profundity. Indeed, it is the very rejection of recordings and all the economic apparatus that necessarily surrounds them that heralds the new horizon. In response, Drummond formed a choir—The17—that would have a variable line-up, would never be recorded, and

would not perform for an audience. Instead it would meet for the purpose of collective music making in a particular moment and place in response to a series of text-based scores of Drummond's own hand. The sound of the choir was initially inspired by the "throbbing engine, rattling bits, wind through the wing mirror and the whoosh of the other motorway traffic" (Drummond, 2008, p. 28) as he drove from Hull to Liverpool along the M62 in the north of England. The prospect of such sounds, to be replicated with the human voice somehow, filled the vacuum left by the fatigued rejection of previous forms of music making clustered around recording.

While Gould and Drummond represent polar ideological positions in relation to recording, both sought to navigate tradition (and all the repetition and expectation that brings) and the future prospects of music making hinging on the effects of recording technology. Both adopt a position that has a personal logic and an aesthetic veracity that allows them to make what they regard as their best music. In reality, it is likely that most artists involved in recording adopt a more center-ground position in between the polar extremities of the Gould-Drummond axis. But, certainly, all recordings represent a pivot point between tradition and future, artists and audiences, works (of some kind) and interpretations; and all recordings assume the form they do through aesthetic and ideological positioning as much as instrumental, technical, imaginative, and economic prowess.

## Transparent Poetics and Musical Assemblages

Capturing a performance for a recording is a poetic moment. The term *poetics*, derived from the Greek *poiesis*, means to create, produce, or make. David Bordwell (2008) summarizes the term in relation to cinema: "The poetics of any artistic medium studies the finished work as the result of a process of construction—a process that includes a craft component [. . .], the more general

principles according to which the work is composed, and its functions, effects, and uses" (p. 12). Henry Stobart (2006), in his ethnographic study of an agrarian community in South America, prises the meaning of poetics out of its entrenched Romantic literary meaning (e.g., "poets" and "poetry") by stressing "the mutual interdependence of musical and socio-economic production" (p. 5).

> The word "production" is also commonly heard in reference to the creation or preparation of something for (public) presentation, such as a piece of music, play, film or radio broadcast. It is notable that this term is often associated with presentational aspects of a work, object or a phenomenon and its reception, rather than earlier stages of its creation. (p. 7)

Indeed, in the case of music recordings, the beguiling aesthetic effects of the music's presentation obliterate the earlier preparatory, poetic stages of its making. Recordings obscure the technical, technological, and ideological story of their making just as live performances obscure the considerable time and effort that goes into the preparation, practice, rehearsal, thought, and decision-making that shapes the musical utterance. As in Stobart's example, the earlier stages of the creation of a recording (or a live performance) are disguised by the presentational aspects of performers', artists', composers', or producers' public-facing image and reception.

Consider the microphone: "Invisible to the listener and a tool of the trade for the producer or engineer, the microphone is the representative of potentially countless future audiences" (Greig, 2009, p. 16). Other technological devices notwithstanding, this indispensable piece of equipment is the channel through which sound to be recorded must pass. Yet, though we undoubtedly hear it, we do not *hear* it. Instead, we listen *through* it, passing our attention

onwards to the source of the sound—the work, the artist, and perhaps the place of the performance. The microphone simultaneously senses, transmits, mediates, inflects, and represents: it is positioned "between the attempt and the realization" (Gould, 1974-75, p. 354) as an object whose function and character places "special demands" (Gould, 1966, p. 336) on performers because "recording's attention to detail creates a distinct kind of pressure" (Greig, 2009, p. 19).

While rendering the musician audible, the recording process (as symbolized by the microphone) makes musicians and audiences invisible to one another, which "removes an important channel of communication, for performers express themselves not only through the sound of their voices or instruments but with their faces and bodies" (Katz, 2004, p. 20). "Whole sets of kinesic and paralinguistic components which reinforce the acoustic content of the recording—including facial expression, gesture, phatic language and rhythmic indicators—are no longer available" (Greig, 2009, p. 19). Reciprocal in-the-moment audience responses during a live performance, upon which a performer may thrive, are absent during a studio recording, which creates a particular kind of non-present relationship between performer and audience.

By making tangible what is transient, a recording transports music from its fragile, ephemeral existence to other times and places; it allows repeatable access to what would otherwise be an unrecoverable event. As a microscope reveals previously hidden micro-worlds, the microphone brings those distant, perhaps revered and elusive figures into an intimate, aural proximity. "The microphone had the same function as the close-up in film history—it made stars knowable, by shifting the conventions of personality, making singers sound sexy in new ways, [. . .] and moving the focus from song to the singer" (Frith, 1986, p. 270). Crooners such as Frank Sinatra and Bing Crosby built their musical identities on the sense of intimacy created by

the proximity of their bodies to the microphone, which also had the perceived benefit of masculinizing their vocal sound via the proximity effect that boosts bass frequencies (below 200 Hz) when within about three centimeters of most microphones. Their sound was made *with* and *by* technology; we hear its effects, but we listen through it.

The simple act of pressing "play" sweeps away all of the complexity, angst, fatigue, and sheer human effort that went into making the recording whose every sound was pored over by a team of skilled musicians and music technology specialists in order to put forth the best music that time, resources, technique, and imagination could render: a version worthy of a place among an infinite library of offerings. The ease and ubiquity of experiencing recordings flattens the complexity of the poetic conditions of their making and can make them appear as cold, indifferent objects of consumption. But recordings are not inoculated against the flow of ideas, predilections, and material constraints. They do not stand outside history and society but are infused with significance for those who make them and for those who listen to them.

The poetic event of capturing a performance in a studio gathers together a complex and specific combination of factors. A recording session is an example of "an aggregation of sonic, social, corporeal, discursive, visual, technological and temporal mediations—a musical assemblage" (Born, 2011, p. 377). Such an assemblage provides an ideal case-in-point for considering music through the lens of "subject-object relations" (p. 377) because people and technologies are necessarily entangled. An assemblage made manifest for the purposes of making, an act of labor, is a *poetic assemblage*, which distinguishes this work of producing from that of symbolic, interpretative exegesis carried out by listeners that continues to "make" the work once it is publicly available. A recording session, understood as a point of confluence, might typically include and draw upon: individual subjectivities (biographies, predilections,

tastes, skills); interpersonal collaboration (between similarly and differentially skilled groups of people, such as musicians and engineers); interpretative exegeses (drawing upon historical and subjective positioning in relation, say, to notions of genre or received performance practices); tools and objects (instruments, computers, microphones, scores, acoustic panels); economic imperatives (which may be commercial, non-commercial, or even anti-commercial in nature); legal frameworks (copyright control, licensing, union guidelines); institutions (record labels, publishers, venues); organizations (orchestras, bands, arts funding bodies); and imagined communities (audiences, critics, other non-present musicians). Assemblages, then, are complex constructs of varying stability that draw together a large body of knowledge, skills, imperatives, perspectives, and materials.

Music and mediation theories go hand in hand because of music's particular (and perhaps peculiar) material and nonmaterial existence as a form of art.

> Music has no material essence but a plural and distributed materiality. Its multiple simultaneous forms of existence—as sonic trace, discursive exegesis, notated score, technological prosthesis, social and embodied performance—indicate the necessity of conceiving of the musical object as a constellation of mediations. (Born, 2011, p. 377)

A musical object, then, is not a singular, identifiable entity but something that is constituted plurally across time and in many places. Music's significance, meaning, and powers of affect derive from a constellation of relations. Recordings of performances are certainly among this constellation and, to a certain extent, endow music with a kind of "material essence." Georgina Born's writing has the explanatory capacity to trace a musical object's cultural life (how its meaning changes over time and alters for different groups of people, for example) and

the theoretical apparatus that her work assembles is relevant to a consideration of performance in the studio because of the sensitivity it has to notions of mediation, particularly in terms of music's sociality and materiality. A recording session is emblematic of the social, musical, economic, cultural, and technological relations that constitute the poetic reality of how music is made.

## Who (and What) Is Performing

Recordings require complicity. No matter how compelling the recording of Debussy's string quartet in G minor (Op. 10), those four musicians are not present in your lounge. So much is obvious. The veracity of the recording may be praised because of the way it conjures the sense of the moment, the resonance of the place, the impression of the musicians' movements and physical exertions. In his exploration of Trent Reznor's combination of real and synthetic instruments, Virgil Moorefield (2005) neatly summarizes the verisimilar quality of recordings:

> This blurring of the distinction between recordings of real instruments and recordings of recordings is an interesting game, and it fits right in with Reznor's overall strategy of playing a kind of push-and-pull with the two poles of record production, the *illusion of reality* [. . .] and the *reality of illusion*. (p. 74; emphases added)

Recordings conjure an illusion of some kind of reality; and that constructed, illusory quality is a fundamental part of the reality of recordings. Recordings that seek to present a "real" situation—the sense of musicians actually playing their instruments in an appropriate acoustic in an uninterrupted and feasible temporal flow—would be described as transparent. That is, the technical means of capturing, shaping, and reproducing the performance are rendered barely perceptible; the music "passes through" the technological processes, seemingly unimpeded and

unchanged, to resemble closely what might be expected in a live performance. Such transparency aligns with the masterwork mentality in which the audience may hear the genius of the composer *through* the performer. Set against that is the notion of opacity: when a recording lays bare or allows its technical poetic origins to be heard, its production aesthetics could be described as opaque.

Transparency and opacity—and all degrees in between—are states that are achieved via very particular means and for very particular reasons. Such means might include microphone selection and placement, choice of recording location and its acoustics properties, post-capture processing (such as equalization and application of reverb), and the quantity and audibility of edits. Transparent production aesthetics obscure the technological reality of the illusion being created while exemplifying the comprehensive effectiveness of this sophisticated ruse. Opaque production aesthetics exploit and celebrate the particularities of the tools and processes in operation by amplifying them and absorbing them into the sonic signature of the music. In their analysis of Los Sampler's "La Vida es Llena de Cables," Ragnhild Brøvig-Hanssen and Anne Danielsen (2016) trace the glitchy stuttering of brutal, numerous cut-and-paste actions that are possible as a direct result of digital technology's capacity for manipulating audio as data. The track begins with a solo Spanish guitar playing a Cuban-style riff presented in what seems to be a straightforward, transparent way. But just four seconds into the track, we hear a stutter that, at first, sounds like a mistake in editing or the CD skipping (which cannot be the case, as we are listening on YouTube). Within a few more seconds, the recurrence of these skips and their close alignment with the underlying metrical frame quickly establishes these features as integral to the track. "The skips and stutters of 'La Vida es Llena de Cables,' then, are powerfully incongruent with our deep roots in understanding music as a spatiotemporally coherent singular performance"

(p. 88). So, "[t]he cut-up techniques thus make the listener aware of the recording/production medium's double function, to mediate and to *be* that which is mediated—it presents itself while it mediates or represents something else" (p. 89, original emphasis). The signature of the digital technology used to make the music is laid bare, incorporated, and celebrated.

The guitarist on Los Sampler's track once sat down in a room and recorded this performance. We hear that performance, but we also hear the performance of the producers coaxing particular effects out of their technological apparatus through various interactions (keyboard, mouse, trackpad, synths, controllers). We hear many kinds of performance simultaneously layered though differentially perceptible and symbolic. As Michael Dellaira (1995) puts it:

> [T]he recording studio is itself an instrument, one step further removed from the original sound sources yet requiring no less technique and sensitivity in bringing those sounds to life. [. . .] For the recording studio is "played" too, though not on stage and in real time. But it *is* played for an audience, an audience who, in the very act of bringing the concert hall to its living room, gladly embraces the illogical and willingly submits to illusion. (p. 200; original emphasis)

The claim that the use of technologies is akin to a performance, based on specialized knowledge and skill required to carry out a task that we readily admit for musicians, sits equitably with the necessarily collaborative social construct of recording performances in which the star performer or ensemble is embedded in a wider team of contributors.

Dellaira (1995) makes another useful distinction "between recorded objects which serve to document live musical performances and those which do not document but which *are* performances in and of themselves" (p. 193; original emphasis). The distinction might be

summarized in binaries such as documentation-generation or capture-invention, both of which rather bluntly downplay the complexity of the situation but are nonetheless useful for explaining different approaches that might be taken in a recording studio. Verbs like “document” and “capture” imply a passivity on the part of recording technologies in that what is being documented and captured is going on already, regardless of the act of recording the performance, and in which the people and technologies assembled have little bearing on the thing being recorded. Similarly, terms like “generate” and “invent” might imply a valorization of such acts of creativity in contradistinction to the servile execution of extant music. A performance of a Haydn piano sonata does not need to generate the score from which the melodic, rhythmic, harmonic, and structural progress is decoded. Instead, the musician concentrates on the interpretative versioning that will be enshrined in the recording. In the case of popular music bands, it is conceivable that no melodic, harmonic, rhythmic, or structural material exists prior to the recording session, which serves as a meeting point to improvise, experiment, and gradually fix the musical ideas in recorded form. Whatever kind of music is being recorded and whatever function the process of recording serves, each constructs an illusion on a spectrum of verisimilitude through very particular technical means in alignment with the aesthetic and ideological tenets of the music being recorded.

## The Studio Environment

One way of understanding the history of recording technologies is to divide the time since 1877 into three broad categories, which are defined by the kinds of technology used to transfer acoustic energy into a stable, repeatable form: acoustical/mechanical, electrical, and digital. George Brock-Nannestad (2009) provides a very useful discussion of the various ways that the history of the development of recording and reproduction technologies (since 1850) can be

traced through mechanical, magnetic, and optical principles. In the acoustical (or mechanical) era (from 1877 to the mid-1920s), vibrations of the air were transferred to a stylus via a large horn to amplify the sonic energy to be engraved on some kind of membrane (originally wax, but later mica or glass; Katz, 2004). As this process entirely depended on a physical, mechanical process, the musicians had to be arranged in relation to the horn according to the power of their instrument's sound so that the sum of the ensemble reached the horn in a balanced way. The resulting configurations were often cramped, uncomfortable, and at odds with the norms of live performance (see Figure 21.1): "Whether jostling for space or standing barely within shouting distance, performers were thus often forced to work in unnatural arrangements that hindered the interaction between musicians" (Katz, 2004, p. 83). Instruments that produce higher sound-pressure levels (such as trumpets and trombones) are placed at the rear of the space, while strings are placed next to the horn. Note also the Stroh violin (with the addition of the amplifying horn attached to the body) and the elevated position of the cellist that brings the sound-emitting F-holes in line with the sound-capture horn.

Insert Figure 21.1 here

The electrical era (1924 onwards) was marked by the introduction of microphone and amplification technologies that enabled wider frequency and dynamic ranges to be captured, giving improved resolution and sense of depth. The pace of technological innovation accelerated due to the competition that radio posed to a recording industry that relied upon physical sales and due to scientific research taking place in telecommunications industries. The improved fidelity of recording technologies allowed musicians to resume a configuration more akin to the live performance situation, with the first recording of a live concert performance occurring in 1926 (Beardsley & Leech-Wilkinson, 2009). Throughout the first part of the electrical era, the means of playback also changed from shellac to vinyl to tape.

Finally, the digital era began to flourish in the mid-1980s with the development of computer technologies that could meet the exacting demands of audio processing. The history of music production technologies becomes aligned with the history of computer technologies, as both were fueled by the capacities of microprocessor and storage technologies. Each technological innovation brought with it a significant shift in associated practices.

Throughout the digital era (which is currently still in progress), two profound effects are notable: (1) the ability to manipulate sound significantly increases in terms of quantity, quality, resolution, and ease; and (2) music production processes become available to a much wider group of people through decreasing costs of technologies. In the early 1970s, the prohibitive costs of studio equipment meant that only "star performers" could assemble such home set-ups "to experiment and create while relatively unfettered by the constraints of time and money" imposed by commercial studios (Théberge, 1997, pp. 52–53). The trend for setting up project studios began in the mid-1980s in response to the inversely proportional pattern of technologies becoming cheaper while their functionality improved. While the technologies required to record performances are still expensive, they are within reach of more people than before. As "technologies have continued to get smaller, lighter, cheaper and more powerful" (Slater, 2016, p. 168), music recording practices have expanded across socio-demographic planes and can take in "[g]eographic locations previously unusable for sonic creativity" (Slater & Martin, 2012, p. 72). Studio set-ups vary considerably in form, location, quality, and size depending on practical factors such as budget and space as well as the purpose they need to serve. The apparatus of a studio will be assembled for very particular purposes and the entirety of the fabric of the studio environment—everything within it and acting upon it—is part of a complex relational interplay. To understand this complexity, the concepts of actors, agency, and affordance are instructive.

Performances take place within a network of relations. The most obvious manifestation of such a network is made up of the people carrying out the various specialized roles during the recording session: the human actors. Edward Kealy (1979) notes in his discussion relating to popular music production that the division of labor in recording sessions reflects three main components: "the music, the commercial system for promoting and distributing it to a mass audience, and the technology for recording and reproducing it" (p. 208). Kealy goes on to say that the "*art of recording* was not to compete for the public's aesthetic attention to *the art that was being recorded*" (p. 211; original emphases); in other words, an artful recording rendered the "little understood" (p. 207) technical roles even more transparent and even less detectable.

Kealy's study of roles in the making of a recording makes space for considering the collaborative connections across a large team of people, with the performer occupying only one, albeit prominent, position. Such a collaborative team might include: producer, engineer, assistant engineer, tape operator, mix engineer, mastering engineer, performer, composer, songwriter, arranger, publicist, agent, artist and repertoire representative, and other ancillary roles. A team like this gathers significant specialist expertise and knowledge, with each person exerting influence; they are human actors whose agency affects and shapes not only the final product but also the nature of the relations across the whole team.

Actor-network theory (ANT) embraces the agency of human actors and also points to the capacity of objects, or "nonhuman actors," to act upon a given moment: "If action is limited a priori to what 'intentional,' 'meaningful' humans do, it is hard to see how a hammer, a basket, a door closer, a cat, a rug, a mug, a list, or a tag could act [. . .]. By contrast, [. . .] *any thing* that [modifies] a state of affairs by making a difference is an actor" (Latour, 2005, p. 71; original emphases). Thinking about the studio, this claim is not controversial: consider the physical

placement of musicians caused by the acoustical and mechanical capacities of the megaphone horn in early recording sessions or the transcendental claims of Gould's aesthetic discoveries that were facilitated by the microphone and magnetic tape. Differences in the act of making a recording, and the resulting musical outcome, are propagated by the agencies of nonhuman actors (styluses, microphones, instruments). As Christopher Haworth (2018) puts it in his study of microsound: "If something leaves a trace—if it makes a difference in some way—then it is an 'actor,' and it is this directive that leads to the inclusion of 'nonhuman' actors amongst those entities that carry agency and are able to produce effects" (p. 608).

In a case study of Danish dance-music producer and performer DJ Static, Mads Krogh (2018) explains how the "teeming mosaic" (p. 529) of Static's studio—"furniture, instruments, computers, turntables, records, CDs and movies, posters, magazines, a vocal booth" (p. 541)—constitutes the "material semantics of his work" (p. 544) in a complex, productive relation that attunes, aligns, and affects Static as he produces his music. The proximity of records (from which he can derive samples) and posters (that conjure the affective community that is his future audience) provide a navigational nudge, forging relations between pasts and futures made present by those objects, and reminding us that musical practices are material in nature.

Inanimate objects, then, have agency because they make a difference; they "authorize, allow, afford, encourage, permit, suggest, influence, block, render possible, forbid" (Latour, 2005, p. 72). Objects afford certain uses in a dynamic relation with the user, who recognizes the properties and potential uses of something (a chair, a cup, a brick, a microphone, a piano, a laptop) and then puts it to use. Eric Clarke (2005) points out that "although affordances depend on the properties of the object, they don't depend solely on them: affordances are the product both of objective properties and the capacities and needs of the organism that encounters them"

(p. 37). Alan Williams (2012) considers the effects of a single piece of equipment that occupies pride of place in most studios—the visual display of the digital audio workstation (DAW)—in terms of its affordances in the musical and social moment of making a recording:

> Consider the enormous amount of information that is conveyed by the computer monitor. DAW waveforms can be expanded to illustrate milliseconds of sonic activity or condensed to represent a recording in its entirety. This has the obvious benefit of making the ephemeral "real," as a song appears to exist as a kind of object. (p. 1)

The computer monitor invites participation, demands attention, educates participants about technological processes and possibilities, and democratizes the process of music recording through its accessible graphical depictions of the captured audio scene. In this sense, the computer monitor affords a kind of flattened social hierarchy in which roles previously segregated by specialist knowledge become commingled.

In addition to the affordances of individual objects, the architectural setting in which recordings take place can also be considered as affording certain uses. In his article "What Studios Do," Eliot Bates (2012) proposes six key functions of a studio, the first five of which outline the territory of socio-architectural affordances:

1. They affect/effect sound during both tracking and mixing, and may become the focus of audition or the subject of critical listening;
2. They isolate studio workers from the outside world, and the world from studio work, while possessing a visual and audible difference from other work environments;

3. They constrain lines of sight and focus visual attention on key places or objects within the studio;
4. They constrain paths of audibility and precipitate the need for [. . .] technologies of audition; and
5. They cultivate new practices and shape social interactions. (pp. 2–3)

Architectural features of a studio render it unique in terms of its acoustic properties and of the experience of being in that space. The pool table, sofas, and tea and coffee facilities play into the situated experience of being in the recording studio as much as its acoustic characteristics and quality of hardware. Studios are constructed in order to focus attention on the task at hand, notably through the way that they constrain paths of audibility by controlling the flow of sound to facilitate a critical mode of listening. Social interactions are also afforded by architectural capacity. In its simplest terms, the physical dimensions of the recording space determine the kinds of ensembles that can perform there. In more complex ways, the physical layout of a recording space may constrain lines of sight between performing musicians in a way that makes the intervention of technology palpable (e.g., headphone monitoring systems); social relations are carried out *through* and *with* technologies. In sum, the studio environment cannot be thought of as a passive container of human experience, but instead exerts a traceable, shaping force upon the creative work that goes on there.

## Practical Implications

For those familiar with performing in the studio, the ideas mapped out here might offer ways to interrogate the moment of recording particularly if the quotidian act of recording performances obscures its critical, conceptual dimensions. For those unfamiliar with the studio environment, and indeed those who fear it, the ways of thinking offered here about what is happening when a

recording is being made are intended to help situate and differentiate recording *in relation* to the wider (perhaps more familiar) modes of music-making practices rather than as being something adjunctive; a kind of purge of anxiety through critical familiarity, or knowing better the nature of the beast. By understanding the technological and social processes at play during a recording session, the creative potential of the recording process is more likely to be fully harnessed; the presentation of sounds, regardless of musical style or mode of operation, is likely to be more compelling because all involved in the process of making a recording will be equipped with a shared vocabulary and the ability to negotiate confidently in the service of achieving the best musical results possible.

The value of such knowledge, fluency, and skill is exemplified in the following extended interview extract with pianist Clare Hammond as she describes her experiences of recording with engineer Thore Brinkmann for BIS Records:

> I really enjoy the recording process—both with the solo stuff that I do and also ensemble or concerto works. [. . .] I think it's a different kind of discipline, a different kind of challenge. You're listening in a different way when you listen back to a recording, and you're listening in a much more precise way. So, you have to be much more aware of yourself in the sessions. And also, it's a more collaborative thing in that not only do you have all the performers involved, but also you have to trust, and you have to have, really excellent engineers because the kind of sound they [produce] can make or break a recording. I really think that people who haven't recorded, or people who don't understand the set-up, [don't] have any conception at all about what difference the placement of a microphone can make or how important the engineer's role is. They really are of equal

> importance to the performers [. . .]. You're always slightly nervous and slightly intrigued to see what kind of sound they'll create; [. . .] it will always be different and then you'll always have to make different modifications to your playing to optimize the sound that's coming through on the recording, which is very different from what you can hear in the hall. And that often brings new aspects of the texture, or new aspects of the rhetoric and the way that you space the line, to light. [. . .] I really quite enjoy that—it's very, very different from live performance. (Personal interview with Clare Hammond, August, 2016)

Hammond draws out the differences between recording and live performance settings, along with the dynamic and productive relationships between musicians, their instruments, engineers, microphones, the recorded sound, acoustics, and emerging musical ideas relating to texture and melodic lines. Hammond describes the fine-tuned modifications that she makes in her performance in response to what she hears in the sound as captured by the technologies through the efforts of the recording engineer; she plays the piano differently and recognizes new possibilities in the composed material as a result of the sound of the highly specific poetic assemblage in which the recording is being made. Hammond's words convey the importance of understanding the inextricably entwined nature of technical, musical, and social understanding in the moment of performing for a recording.

By way of conclusion and to provide a summary of the practical implications of the discussion set out in this chapter, four proposals are offered. These are intended to be very general in nature, as the reader's positioning in terms of genre, experience, knowledge, and skill will largely determine how relevant or already familiar each one is. They are intended to have

some practical applicability for those involved, or soon-to-be-involved, in recording performances.

*First, recognize the similarities and differences between musicianship in the recording studio and musicianship in the live performance setting.* Critical aspects of studio performance—such as preparation, technical control, and interpretative clarity—remain the same as for live performance, but the situated context of performing in the studio places different demands on the performer. Most notably, the audience is replaced by inanimate technological objects, which requires an imaginative leap in the moment of performance to connect with distant, future listeners. The performer may need to find some way of conjuring the idea of an audience if that in-person energy normally enlivens their performances. While the absence of an audience may serve to lower to physical and emotional strain of performance anxiety, the recording process may require a degree of physical stamina not normally experienced in the live domain because of the numerous takes that are likely to be captured.

*Second, understand the ideological purpose that underpins the making of the recording and recognize that there may be competing ideologies at play*. Gould and Drummond represent extreme positions in terms of the possible mixtures of recorded and live performance activities, but both are ideologically driven. While Hammond invokes the trust she has in Brinkmann as her engineer, it may be that in other partnerships the motivations, intentions, and ideological goals of the performer differ from those of the engineer, producer, agent, or record label. All recordings are made with a specific purpose in mind and take the form they do accordingly, but different parties involved in the process may have varying ideas about how this should take place and what the eventual finished outcome should be. Such ideologies might inform the degree to which technological interventions are permitted to be perceived (transparency and opacity), which

might open up a consideration for notions clustering around authenticity, presentational realism, veracity, and the like. The ideological positioning of the recording will relate to how the recording, with its specific sonic qualities, aligns with wider conditions of the music culture, including performance locations, practices, norms, and expectations.

*Third, acknowledge the agency and affordances of technology.* While the efficiency of technology renders its presence and functioning less detectable and makes it appear somewhat silent and invisible, its effects are no less significant. All technologies exert a shaping force by what they afford and by what they inhibit. Each microphone, for example, carries out the same basic function, but the specifics of the design of each model affects the sonic characteristics that will be achieved (e.g., via polar patterns and frequency response curves). As a result, different microphones suit different purposes. The microphone is the ideal example of technological mediation: what passes through the microphone is inflected, colored, or *mediated* by the particular properties of the object.

Digital audio workstations now permit copious editing interventions at extremely fine scales of magnification, which allows a very high degree of control over the temporal and rhythmic flow of the recorded music. Equalization and complex pitch-correction tools help shape and morph the frequency profile of a recording at both a general level across the whole recording and also within textures, which means melodic and harmonic content can be altered, perhaps corrected, after the fact. And the application of reverb alongside spatialization in the stereo domain (or in higher-order spatial contexts such as ambisonics) means that the illusion of location and the exploitation of the significance of a sense of space can form part of the expressive force of the recorded performance. The practical implication of this point is both simple and complex: on the one hand, musicians recording in the studio might be well advised to

gain a basic understanding of the technologies being used and how they contribute to and inflect the final outcome; on the other hand, the relationship between musicians and technologies is far more complex than an active-passive binary. The most compelling studio recordings may be those in which performers have attended to and understood the inflecting effects of technology, have adjusted their instrumental performance accordingly, or have sought new ways to generate and combine sounds. This kind of understanding, derived from experience, takes time.

*Finally, admit the reality of the illusion that is fundamental to what a recording is*. Complex issues around persona, authenticity, authority, coherence, and integrity are brought into relief by recordings. Indeed, what makes recording so powerful a medium is the sense of the performer in such close proximity to the listener. But such a culture of individualism in which a single artist can gain credit for the totality of the work undermines the necessarily complex collaborative sociality of recordings, which is further compounded by the powerful capacity of computer technologies to intervene imperceptibly in audio—in music—as data. Such an illusory construct, though, does not undermine the value of musicianship and skill; recordings, instead, resituate the locus of value from the pristine musical performance given flawlessly and seamlessly to the performance given by the whole, complex crew that constructs the compelling illusions embodied in recordings.

## Key Sources

Born, G. (2011). Music and the materialization of identities. *Journal of Material Culture*, *16*(4), 376–388. https://doi.org/10.1177%2F1359183511424196.

Gould, G. (1966). The prospects of recording. In T. Page (Ed.), *The Glenn Gould reader* (pp. 331–353). New York: Vintage Books.

Katz, M. (2004). *Capturing sound: How technology has changed music*. Los Angeles: University of California Press.

Théberge, P. (1997). *Any sound you can imagine: Making music/consuming technology*. Middletown, CT: Wesleyan University Press.

Williams, A. (2012). Putting it on display: The impact of visual information on control room dynamics. *Journal of the Art of Record Production*, *6*, 1–8.

## Reflective Questions

1. How might you perform differently in a recording studio compared to being in front of an audience for a live performance?
2. What influence does technology exert upon you as a performing musician during a recording session?
3. How do recordings contribute to and challenge your understanding of the forms of music's existence?
4. How would you characterize the relationships between the people and the technologies assembled for the creation of a recording?
5. When you listen to a recording, what does its sense of realism (or not) tell you about the priorities and ideologies of those who made it?

## References

Bates, E. (2012). What studios do. *Journal on the Art of Record Production*, *7*, 1–25.

Beardsley, R., & Leech-Wilkinson, D. (2009). *A brief history of recording to ca. 1950.* Centre for the History and Analysis of Recorded Music, Royal Holloway, University of London, UK – see http://www.charm.rhul.ac.uk/history/p20_4_1.html [accessed April 30, 2020]

Bordwell, D. (2008). *Poetics of cinema*. New York: Routledge.

Born, G. (2011). Music and the materialization of identities. *Journal of Material Culture*, *16*(4), 376–388. https://doi.org/10.1177/1359183511424196.

Brock-Nannestad, G. (2009). The development of recording technologies. In N. Cook, E. Clarke, D. Leech-Wilkinson, & J. Rink (Eds.), *The Cambridge companion to recorded music* (pp. 149–176). Cambridge, UK: Cambridge University Press.

Brøvig-Hanssen, R., & Danielsen, A. (2016). *Digital signatures: The impact of digitization on popular music sound*. Cambridge, MA: MIT Press.

Clarke, E. F. (2005). *Ways of listening: An ecological approach to the perception of musical meaning*. Oxford: Oxford University Press.

Dellaira, M. (1995). Some recorded thoughts on recorded objects. *Perspectives of New Music*, *33*(1–2), 192–207.

Drummond, B. (2008). *17*. London: Beautiful Books.

Frith, S. (1986). Art versus technology: The strange case of popular music. *Media, Culture and Society*, *8*(3), 263–279. https://doi.org/10.1177/016344386008003002.

Gould, G. (1962). Let's ban applause! In T. Page (Ed.), *The Glenn Gould reader* (pp. 245–250). New York: Vintage Books.

Gould, G. (1966). The prospects of recording. In T. Page (Ed.), *The Glenn Gould reader* (pp. 331–353). New York: Vintage Books.

Gould, G. (1974–1975). Music and technology. In T. Page (Ed.), *The Glenn Gould reader* (pp. 353–357). New York: Vintage Books.

Gould, G., & Page, T. (1981). Coda: Glenn Gould in conversation with Tim Page. In T. Page (Ed.), *The Glenn Gould reader* (pp. 451–461). New York: Vintage Books.

Greig, D. (2009). Performing for (and against) the microphone. In N. Cook, E. Clarke, D. Leech-Wilkinson, & J. Rink (Eds.), *The Cambridge companion to recorded music* (pp. 16–19). Cambridge, UK: Cambridge University Press.

Haworth, C. (2018). Protentions and retentions of Xenakis and Cage: Nonhuman actors, genre and time in microsound. *Contemporary Music Review*, 37(5-6), 606–625. https://doi.org/10.1080/07494467.2018.1577639.

Katz, M. (2004). *Capturing sound: How technology has changed music*. Los Angeles: University of California Press.

Kealy, E. R. (1979). From craft to art: The case of sound mixers and popular music. In S. Frith & A. Goodwin (Eds.), *On record: Rock, pop, and the written word* (pp. 207–220). London: Routledge.

Krogh, M. (2018). A beat is a hybrid: Mediation, ANT and music as material practice. *Contemporary Music Review*, *37*(5–6), 529–553. https://doi.org/10.1080/07494467.2018.1575125.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.

Moorefield, V. (2005). *The producer as composer: Shaping the sounds of popular music*. Cambridge, MA: MIT Press.

Page, T. (1984). Introduction. In T. Page (Ed.), *The Glenn Gould reader* (pp. xi–xvi). New York: Vintage Books.

Slater, M. (2016). Locating project studios and studio projects. *Journal of the Royal Musical Association*, *141*(1), 167–202. https://doi.org/10.1080/02690403.2016.1151241.

Slater, M., & Martin, A. (2012). A conceptual foundation for understanding musico-technological creativity. *Journal of Music, Technology and Education*, *5*(1), 59–76. https://doi.org/10.1386/jmte.5.1.59_1.

Stobart, H. (2006). *Music and the poetics of production in the Bolivian Andes*. Aldershot: Ashgate.

Théberge, P. (1997). *Any sound you can imagine: Making music/consuming technology*. Middletown, CT: Wesleyan University Press.

Williams, A. (2012). Putting it on display: The impact of visual information on control room dynamics. *Journal of the Art of Record Production*, *6*, 1–8.

Figure Caption

Figure 21.1.

Music director Rosario Bourdon conducting Victor Symphony Orchestra (precise date unknown, c. 1920–1930). George H. Clark Radioana Collection, Archives Center, National Museum of American History, Smithsonian Institution. Used by permission.