

Listening To or Through Technology: Opaque and Transparent Mediation

Ragnhild Brøvig-Hanssen

Despite an emerging interest in analysing the technological aspects of popular music production (Bayley 2010, Cook et al. 2009, Frith and Zagorski-Thomas 2016), scholars continue to lack a conceptual framework for addressing previously ignored aspects of the sound itself. In this chapter, I propose to add to the analytical vocabulary the concepts of “opaque and transparent mediation.” Through theoretical discussions and brief analyses of various music productions, I demonstrate the ways in which these concepts may help to describe various listening experiences and musical paradigms.

Mediating technology is imperative to all forms of popular music—editing operations such as splicing, and processing tools such as reverb, affect the sound whether we notice them or not. When we do not, it is because we perceive the technological mediation as *transparent*, not because there is none. Similarly, when we *do* notice those operations, it is not necessarily because there are more of them than usual but because they are used in a way that attracts our attention. If, for example, a track is spliced in a silent spot, it will be much less noticeable than if the splice interrupts a sound. The notions of opaque and transparent mediation help to clarify that what is usually at stake is not whether the music is unmediated or mediated, or how much mediation is involved, but rather how the mediation involved in the music is *perceived*. Transparent mediation implies that the listener’s focus is directed towards what is mediated and not towards the technological mediation itself, whereas opaque mediation implies that the listener is attracted to the act of mediation itself, *in tandem with* that which is mediated.¹

Opacity and transparency are obviously not inherent qualities of music; listeners will perceive sound differently according to their personal musical experience, context and history. For example, a music engineer may notice a subtle use of compression on a voice, while a listener who has no experience with music production may perceive the same voice as “natural.” Does this mean, however, that one’s comprehension of mediation as either opaque or transparent is arbitrary? Drawing on theories from ecological perception and philosophy, I suggest that we are more likely to recognise technological mediation at three specific moments. The first is when it disrupts the spatiotemporal coherence of the music.

The second is when it disturbs our familiar way of hearing a sound. The third is when it operates at the border between what we understand as being the music's interior and exterior.

Opaque and transparent mediation

Music editing tools and processing effects, such as the cut-and-paste tool or the compressor and equaliser, can be used subtly to embellish and improve musical performances but also aggressively to create unique aesthetic effects via distinctive inscriptions of their own on the sound. These various ways of using and perceiving mediating technology have been identified by several scholars and assigned different names. In *Capturing Sound: How Technology Has Changed Music* (2004), Mark Katz introduces the notion of "phonograph effects" to illuminate "the manifestations of sound recording's influence" on music and listeners (2004: 3). In some of his case studies, such as his analysis of "Praise You" by Fatboy Slim, the term "phonograph effect" could in fact be replaced by "opaque mediation." Yet there is an important distinction: "phonograph effect" describes *any* influence that technology has had on music and the listener, such as how the three-minute limit of a ten-inch 78-rpm phonograph record dictated (and, following Katz, still impacts) the length of the popular song (2004: 32). Opaque mediation, on the other hand, only describes the mediation involved in the musical production that is experienced as exposed. Simply put, all instances of opaque mediation are phonograph effects, but all phonograph effects are not instances of opaque mediation.

"Opaque" and "transparent" mediation might further evoke Denis Smalley's distinction between the "naturalist work" and the "interventionist work" (2007: 54). Although Smalley uses his term "naturalist work" in a way similar to how I use transparent mediation, and "interventionist work" in a way similar to how I use opaque mediation, I find his terms to be problematic. First of all, the means of achieving transparent mediation might involve just as much "intervention" as those achieving opaque mediation. As Andy Hamilton argues in his critique of Boulez's criticism of progressive technology, "The purist recording is not, as Boulez thinks, the one without intervention, but the one where intervention is directed towards creating a realistic auditory image" (2003: 351). Furthermore, in relation to the connotations of the "naturalist work," we must recognise that opaque mediation is experienced as both unnatural *and* natural, depending upon various factors that I will return to later. Therefore, as a qualifier, "natural" has little to recommend it.

The terms opaque and transparent mediation might also evoke the French philosopher Louis Marin application of the same concepts to painting and semiotics. Marin proposes that “to represent” means, in short, to *present oneself* as representing *something else* (1991: 60). He labels the representation’s condition of representing something else a “transitive dimension,” while he labels the representation’s *self-presentation* a “reflexive dimension.” Similarly, recorded music is always the sum of (1) its mediated sounds and (2) the sonic imprints of the technological mediation’s self-presentation. Consequently, it has both a transitive and a reflexive dimension. If mediation did *not* have a transitive dimension, it would not in fact be mediation, since the term itself necessarily implies that something is being conveyed. Likewise, to deny its reflexive dimension is to deny that technological mediation transforms or adds new qualities to sounds. While Marin uses the descriptors “reflexive” and “transitive” to explain representation at an ontological level, he uses the concepts of “opacity” and “transparency” to explain the experiential aspect of the reflexive dimension, “the various ways in which . . . representation presents itself while representing something else, the various modes of its self-presentation” (ibid.: 66). While this description may sound like my notions of “opaque” and “transparent,” there are certain differences that can be traced to the fact that while Marin discusses *representations*, which are based on substitutive signs, I discuss technological *mediation* that is not based on signs in this sense. Marin observes that representational signs, such as letters or paint brushes, must necessarily be experienced as opaque—they must be *seen*—in order to be experienced in turn as transparent to what they represent—that is, in order to be able to communicate meaning. Marin calls this the “paradox” of the functioning sign: the sign or representation is at the same time present and absent, opaque *and* transparent (ibid.: 55–56).² The content of a book is only accessible through its words and letters, and the content of a picture is only accessible through its paint and brush strokes, but the content of music, on a perceptual level, is different in this regard. Though we do not have access to sounds except through mediation, we do not need to hear the mediation *as mediation* (that is, to acknowledge it) in order to hear the sounds; often the listener does not notice the mediation as distinct from the sound but associates it with the sounds themselves. When it comes to the technological mediation involved in the production of music, opacity is, in other words, not a means of fulfilling the transparency function.

Marin illustrates the various conditions of mediation with a metaphor: “To be at the same time present and absent is a good visual and conceptual definition of a transparent thing, a glass pane through which I look at the landscape beyond. If there are scratches on it,

or stains or blotches, I suddenly see the window pane instead of the garden, its lawn and its trees” (ibid.: 57). This might seem to be a good analogy for transparent and opaque mediation: transparent mediation implies a self-presentation (of mediation) that the listener can completely ignore, whereas opaque mediation implies a self-presentation that is exposed and thus must be reckoned with. There are, however, at least two problems with this analogy. First, it assumes that the foregrounded technology is a flaw, or something undesired, which is often not the case. Second, it suggests that the mediation is an intermediary between the listener and the “real world.” While a recording can *represent* a pre-existing performance, it can never copy it; the recording medium is, to borrow Theodore Gracyk’s characterisation, the *primary text* in and of itself (1996: 21). As Jonathan Sterne explains, recording has always been a studio art: “Even in so-called live situations, the machine required a certain amount of attention, care, and technique” (2003: 235). In line with this, Evan Eisenberg questions whether “recording” is an appropriate term for this format (2005: 89). Based on this acknowledgment, Sterne argues against what he calls “a philosophy of mediation”: “The medium does not mediate the relation between singer and listener, original and copy. It *is* the nature of their connection. Without the medium, there would be no connection, no copy, but also no original, or at least no original in the same form” (2003: 226). This argument is like Hamilton’s critique of what he characterises as the “transparency thesis”: “However one presents the transparency thesis, it faces the obvious challenge that recordings are artefacts. The recorded image, like the photographic image, is always crafted. It is not unmediated; the medium is significant” (2003: 351). While I totally agree with their reasoning, I still insist that a discussion of technological mediation and transparency can be fruitful if we are aware of the different definitions of the term mediation, *and* if we distinguish between mediating/reproducing *events/performances* and mediating/reproducing *sounds*.

The Latin *mediates*—the etymological source of the verb “to mediate”—means “to be placed in the middle,” which tells us that mediation forms a link between two different things, people or phenomena. In line with this, the term “mediation” is usually meant to signify either (1) the process of intervening or negotiating in a dispute in order to bring about an agreement or reconciliation, or (2) an intermediary process realised through a medium or instrument of transmission. The latter meaning of “mediation” indicates two further subcategories relating to either the process of interacting or the act of conveying. Mediation as interaction indicates a two-way process of communication or affection, while mediation as conveyance indicates the transmission of something from a source to a receiver, or from one place to another. The latter form of mediation might involve communicating something

through representations, such as semantic meanings mediated by alphabetic letters or images mediated by paintings, or it might involve physical transmission of something through a material medium, such as the physical transportation of contaminants through water or the processes of sound transmission. “Mediation,” thus, has a variety of applications, but, in my use of “opaque and transparent mediation,” I will reserve it for the process of technological transmission of sound from a source, through a material medium, to a (potential) receiver.

Music, in fact, is utterly dependent upon various processes of transmission through a material medium in order to be heard or even to come into being at all. For instance, a given acoustic guitar sound might have undergone the following stages of mediation: after being brought to life through the vibration of the guitar strings, it is first mediated (and affected) by the acoustic guitar’s body, then by the environmental space in which it occurs. It might then be electronically mediated by a microphone, and possibly by a compressor. If it is destined for a recording, it will be further mediated by a mixing console, a computer interface (which involves the mediation of a preamplifier and an analogue-to-digital converter), then by a computer, and then by processing effects and editing tools. Ultimately, it will be mediated by a certain recorded format (such as LP, CD, cassette, mp3 file and so on). Before the consumer can actually hear it again, it must be further mediated by a playback device, and by speakers, and by the environmental space in which the speakers are placed, not to mention the eardrum. In all these instances, a sound is travelling through (or is being processed by) technological mediation, and all these different processes of transmission contribute to the sonic result—it is the sum of all these processes that constitutes a sound’s identity. Therefore, sound and mediation cannot be separated at an ontological level. Yet, not all instances of technological mediation are experienced as a sound’s identity. For example, if a listener characterises a sound as “cut up,” the listener conceptually distinguishes between a sound and a production tool affecting the sound’s identity. The mediation involved in this process (the cut-up tool) is thus experienced as part of the music (or part of the music’s interior) but separate from the sound’s “pure” identity.

While some will regard what happens when the output signal of an electric guitar enters directly into a distortion pedal before output as mediation that contributes to the electric guitar sound’s identity, others will regard it as mediation that is *applied to* the electric guitar sound. In both instances, the mediation merges with the guitar sound, but the extent to which we experience it as integral to the sound or as applied to the sound will vary according to who the listener is and what the circumstances are, among other things. Instead of being inherent qualities of sounds, then, opacity and transparency comprise what Max Weber calls

“ideal types,” analytical poles between which “real life” presents many intermediate positions, meaning that they describe rather than define reality (1922: 146–214). In fact, the notion of opaque and transparent mediation has derived from my interest in the many ways we listen, and specifically in the fact that some of us focus on some forms of technological mediation involved in a musical production rather than others, and that others of us might ignore those same forms, and that all of this can change over periods of time that range from minutes to decades or more. Moreover, sometimes we may experience the same sound as both opaque and transparent, depending on what context it occurs in and/or what context we compare it to.

This does not, however, mean that our experience of opacity and transparency of technological mediation is completely arbitrary. While it would have been very interesting to test this empirically, I here present a hypothesis based instead on ecological theory: while people’s experience of transparency and opacity seems to vary according to time, place, genre, listener’s background, and so forth, there seem to be typical moments when mediation is usually experienced as opaque. These include those moments when the technological mediation disrupts the spatiotemporal coherence of the music; when it disturbs our mental imagination of the sound source’s “pure” identity; and when it straddles the border between “intramusical mediation” and “extramusical mediation.” This hypothesis is also the reason why I believe that these concepts can be used not only as perceptual concepts but also as signals of alternative musical paradigms. In what follows, I will explain some of the reasons why technological mediation is typically experienced as opaque at these moments and exemplify some of the ways in which musicians have explored these moments.³

Opaque mediation as musical paradigm

According to James J. Gibson’s theory of ecological perception (1986), people (and animals) understand new environments according to their previous experiences with similar environments. The importance of previous experience is emphasised by other scholars as well, such as Marc Leman and Albert S. Bregman. Leman is principally concerned with people’s attribution of meaning to sound through habits or conventions—what he calls their “cultural constraints” (2008: 56), and Bregman is interested in the ways in which experiential regularities form mental “schemas” that affect the perceptual organization of sound (2001: 43). In his investigations into the listener’s perception of the spatial image of electroacoustic

music, Smalley similarly points out that people have a “*natural* tendency to relate sounds to supposed sources and causes, and to relate sounds to each other because they appear to have shared or associated origins” (1997: 110). Sounds are, in other words, generally source bonded, because, as Eric Clarke points out, a fundamental mechanism of auditory perception is the identification of a sound’s origin (2005: 3).

When listening to music, then, we are likely to make sense of the sound by comparing it with our previous engagements with sound—that is, an experience with one sound environment becomes an instant resource for the structuring and comprehension of a similar environment. For example, because people in general have a great deal of experience with interpreting sound as signifying space, their experiences with different acoustical reflection patterns unconsciously allow them to imagine specific actual spaces when listening to music.⁴ What is interesting is that in everyday life, we engage with very different forms of sonic environments. For example, we regularly encounter spatiotemporally coherent and source-specific sounds that follow strict acoustical laws (such as an everyday conversation), but we are also surrounded by soundscapes where anything and everything goes (such as musical recordings and soundtracks). People’s awareness of alternative contexts, and of what rules apply within them, remains very strong. For example, though a technologically filtered voice may now be naturalised in a *musical* context, thanks to the mind’s ability to adjust to new sonic environments with dispatch, it would be uncanny indeed if the person next to us suddenly started speaking in that sort of voice. Likewise, if the vocals of a contemporary pop music track had not been compressed, equalised or processed, that track would likely not become a hit, even though this is the vocal sound that we are most used to in an unmusical setting. Relevant here as well is Gibson’s notion of affordance, and particularly his observation that the same environment might afford different things in different contexts (1986: 128).

Interestingly, however, it seems as though listeners often draw upon several sources of reference simultaneously, such as comparing the filtered voice both to how voices are heard in everyday settings *and* to how they often appear in musical settings. Consequently, the filtered voice is at once experienced as completely normal *and* as manipulated. To take another example, it is only against the backdrop of our continued understanding of a spatiotemporally fragmented soundscape as consisting of spatiotemporally coherent sounds that have been disrupted that the concept of a musical montage or collage makes sense. While music that evokes a sense of surreality generally becomes naturalised over the course of time, the human mind persists in meeting music not *only* on its own terms—as a musical

environment in which anything goes—but also in the context of everyday life. As Smalley points out, “the idea of source-bonded space is never entirely absent” (2007: 38). And, we might add, neither is the idea of a sound’s acoustic qualities, such as its spatial and temporal coherence. This friction between the ecological constraints of listening and the liberating processes of naturalisation generates a perceptual friction in which the technological mediation involved in the music production evoke the listener’s familiarity with a sound even as it subverts it. And it is at these moments when sounds are defamiliarised that they are likely to be experienced as opaque.

Musicians and sound artists have always used recording technologies artistically to subvert listeners’ expectations, including those linked to previous experiences with sounds and with the acoustic qualities of sound (its spatial and temporal coherence). In my summary of the ways in which technological mediation has been deliberately exposed, I also identify a third creative means of subverting listeners’ expectations—namely, the introduction of what is usually conceptualised as the music’s exterior into the music’s interior. That is, listeners seem to distinguish between what they conceptualise as technological mediation that is part of the music (such as the use of processing effects and editing tools) and mediation that is not part of the music, although it still influences the sounds (a category typically encompassing file formats and recorded formats, playback devices and so on—that is, mediation applied after the music is “mastered”). Sounds commonly understood as exterior to the music that are used in a musical way often draw attention to themselves and are thus experienced as opaque. Below, I give examples of all three ways of exposing technological mediation to listeners while arguing that opaque mediation can, in addition to functioning as a set of perceptual concept, also signal a musical paradigm.

Spatiotemporal fragmentation

One of the ways in which technological mediation has been deliberately exposed is through highlighting the music’s fragmented construction. While the invention of the phonograph separated sounds from their sources and allowed for overdubbing (see, for example, Day 2000 and Théberge 1997), the invention of the magnetic tape recorder made it possible to literally cut tracks apart and paste them together again through the process of splicing. The spatiotemporal disjuncture of sound was further ushered along by the magnetic multitrack tape recorder. Not only could parts be recorded at different times and in different locations

but also, because sounds could now be recorded through several channels without being automatically bounced onto a single track afterward, parts could be treated separately even *after* they had been recorded. Consequently, recorded music came to encompass (and, in turn, imply) a patchwork of sounds recorded at different times and in different spaces. Digital technology did not “split” these sounds any *further* from their sources than the magnetic tape recorder did. However, thanks to its malleable digital nature (its conversion of sounds into binary numbers) and non-destructive editable environments, digital technology has facilitated and accommodated already established editing operations, making them even more frequent and profound.

Recording musicians have always experimented with the editing opportunities associated with treating space and time as musical parameters, including creative ways of exploring spatiality in music. Both delay and reverb effects may be used to produce a virtual spatial environment that sonically recreates any “worldly” space, but they may also be used to produce a spatial design that clearly differs from any familiar actual space. Peter Doyle points to music recordings as far back as the late 1940s and early 1950s in which the virtual spaces reveal a “strong sense of ‘manufacturedness’,” as he puts it (2005: 143). For example, Speedy West and Jimmy Bryant’s “West of Samoa” (1954) alternates between “dry” and “wet” verses, which, according to Doyle, “serve[s] to cast the listener in and out of a mysteriously exotic, more than a little threatening soundscape” (ibid.: 156). When the magnetic tape recorder became the standard recording medium, musicians and engineers started experimenting with the tape path of the recording machine to create an artificial echo or delay (Zak 2001 and 2012). An example of experimentation with sonic spatiality in the digital domain is Kate Bush’s “Get Out of My House” from her 1982 album, *The Dreaming* (EMI). In “Get Out of My House,” the digital reverb and delay present an otherworldly musical spatiality that clearly differs from any actual physical environment. One reason for this is the distinctive nature of the reflection patterns that Bush applies, such as the gated drum sound: the reverb first suggests a large and empty hall but is then cut off after only a few milliseconds, rendering the “big” sound suddenly dry. The effect is almost surreal, as Zak points out in his description of gated reverb as well: “We are immediately taken from the acoustic world as we know it into a strange soundscape of unknown dimensions where sounds behave in unfamiliar ways and the air itself is controlled by machines” (2001: 80).⁵ The other reason is the track’s combination of several different virtual spaces at the same time. For example, at 0:46, the sound of the recording suggests three different sound spaces simultaneously; a small, dry space for a male voice, a slightly larger space for the female

voice and a much larger space for the percussive sounds. While each of these juxtaposed spaces could be heard to simulate an actual space, the sonic collage they comprise could never be experienced in reality. Smalley describes this as a *spatial simultaneity*—that is, an occasion when “you are aware of simultaneous spaces” in the music (1997: 124). The listener is here likely to hear the mediation in question as opaque—the technological mediation comes to the fore by giving away the game of the music’s fragmented construction.

Another way to make mediation appear opaque is by exploiting the cut-and-paste tool through an artful disruption of the acoustic qualities of sounds, in this way highlighting the music’s fragmented construction. While the cut-and-paste tool is often used in a discreet or entirely hidden fashion to eliminate unwanted sounds or move a sequence from one take to another, it is also quite common to take a more experimental approach to cutting and pasting by highlighting these operations. In the analogue era, this type of editing involved razor blades to physically cut and splice actual audiotape; composers who experimented with it included William S. Burroughs, John Cage, Pierre Schaeffer, and Karlheinz Stockhausen, among others. For example, Stockhausen inserted leader tape—that is, blank, nonmagnetic tape normally used at the beginning and ending of a track—between sounds to create percussive, stuttering effects (2002: 135). Such artful disruption of the acoustic qualities of sounds has a longer trajectory as well. For example, Schaeffer produced a similar cut-up effect by using a disc cutter to lock grooves in the phonographic disc to repeat the sounds therein (Ibid.: 92). In the digital era, the cut-and-paste operation involves the cursor and mouse-click of the computer-based sequencer program, or some experimentation with samplers or software, which is significantly less time consuming and thus more common. As Caleb Kelly points out, stuttering and skipping sounds “are now simply another part of the sound palette of the digital producer” (2009: 10). For example, “50 Cycles” (*Ultravisitor*, Warp, 2004) by Squarepusher (Tom Jenkinson) is characterised by clear traces of cut-ups in its stuttering freeze-and-flow style. Jenkinson explains that he used the Vegas DAW software by Sonic Foundry/Sony (now owned by Magix Software GmbH) “to assemble literally thousands of edited pieces of audio” when producing this track (Tingen 2011). The vocals are all chopped up, and the sound pieces are often separated by short signal dropouts, so that each sound starts and stops abruptly. Other times the vocal sounds are chopped up, copied, and pasted consecutively, producing a staccato stutter. The vocal sounds are occasionally also repeated numerous times at such short intervals that the listener hears a percussive “drumroll” effect rather than a straightforward stutter. The song’s incomplete sounds, abrupt transitions between sound sequences, signal dropouts, stuttering rhythms, and other percussive cut-up

effects all demonstrate its spatiotemporally fragmental nature, and, as such, draw attention to the technological mediation involved in the production of the song.

A third means of exposing a musical track's spatiotemporal disjuncture of sound, making the mediation appear opaque, is through the use of samples that are recognisable to a broad group of listeners, or at least recognisable *as samples*. With music that highlights the samples' "quotation marks," the mediation is likely to be experienced as opaque because the samples reveal themselves as what they are: extracts from a pre-existing recording that have been inserted into a new context via some technological means. While sampling has a long trajectory, I will use contemporary mashup music as a case study here. Mashups are generally characterised by their use of nothing but samples from popular recordings. Usually, the manipulation of these tracks is concealed, to achieve an audience response along the lines of "These tracks shouldn't go together but they do!" The meaning-making in mashups takes place within the listener's constant negotiation between the sources as presented in the mashup and the sources as presented in their original contexts (see, for example, Brøvig-Hanssen 2016, McGranahan 2010, and Sinnreich 2010). The mashup, then, openly announces its own fragmented construction in order to generate new meaning.

Mediation comprehended as applied to sounds

While musical spatiality, cut-ups, and the use of recognisable samples may expose the technological mediation by highlighting the music's spatiotemporal fragmentation, the technological mediation involved in the musical production process also often come to fore when it disturbs our notions of a sound source's "real" or pure identity—that is, when we experience the sounds as sonically transformed by technological mediation. However, as already mentioned, the elasticity as to what is regarded as "natural" or "pure" sound is vast and will differ from listener to listener and context to context. I will therefore exemplify this form of opaque mediation with the technologically manipulated voice, since it is in a category all its own—as Canadian composer and writer Barry Truax points out: "The first sounds to which the ear is exposed as it develops in the foetus are human sounds, and from that point onward, the voice and human soundmaking are the sounds to which we are most sensitive as listeners" (2001: 33). Our sensitivity to the voice is evident when we listen to singing that is clearly impacted by pitch-shifting devices such as Antares's Auto-Tune

software which can transform slightly off-key sounds into exact pitch levels. While this effect, often referred to as “autotuning,” is usually used subtly and discreetly in the service of improving pitch in a given performance, it can also be used to eliminate both the natural vibration of the human voice’s sustained tones and the natural sliding transitions between different tones, which in turn makes the vocal performance sound mechanical and robotic. This opaque use of autotuning was made famous by artists such as Cher, with her 1998 hit “Believe” (one of the best-selling singles of all time), and contemporary rap and R&B singer T-Pain, who has made it a trademark of his sound. But over the last decade, in particular, the exaggerated use of pitch-shifting tools has appeared in a wide variety of popular music genres and supplied a wide range of aesthetic effects.⁶ For example, in 2009 the American indie folk band Bon Iver released their EP *Blood Bank* (Jagjaguwar) with their characteristic track “Woods,” which is an a cappella choir performance consisting of overdubs of Justin Vernon’s voice, in which each overdub is clearly autotuned. The folk- or hymn-like melody, the polyphonic a cappella vocals, and Justin Vernon’s tender and passionate delivery of the lyrics create an introspective, almost spiritual, atmosphere that supports the track’s message about seeking peace and slowing the passage of time. The substantial and opaque use of pitch-shifting on the vocals, in the manner of Cher and T-Pain, disturbs the vocal’s characteristically “human” qualities, and yet, interestingly, this particular hybrid of human and technology somehow manages to create a unique emotional and sensual atmosphere that neither the human vocal nor the technology could have managed on its own. Even though the vocal and the pitch-shifting tool are completely merged in this song, the listener is likely to experience the performance as a hybrid between the sound source and the mediation applied to the sound source, because the technological mediation upends our notion of a pure vocal sound.

Straddling the border between “intramusical” and “extramusical” mediation

A third way in which the mediation’s self-presentation is likely to be recognised as opaque and as a means of creating an aesthetic effect is through its challenge to our dichotomy between interior and exterior sounds—between the sounds that “belong” to the music and the sounds that reside beyond it. Above, I noted that stuttering, cut-up sounds draw attention to the technology involved because they reveal that the music is a fragmented constellation.

Another reason why cut-up sounds are likely to be experienced as opaque mediation is that they are often entangled in associations of malfunctioning technology, such as a CD player that has problems reading the information on a scratched disc or a computer program that halts or freezes during playback of an audio file.⁷ While some music productions are based purely on technological glitches, others stage the glitchy sounds of skips, stutters, hangs and signal dropouts as passing effects, between which we are meant to sense a coherent musical performance. This is the case for Squarepusher's "50 Cycles" (2004), mentioned above. Even if we understand these glitchy sounds to be part of the composition, they are not so easily released from their associations with technological failure. That is, skips and stutters designed for aesthetic purposes are not what we traditionally think of as music, yet they are somehow more artful and musical than glitches occurring naturally. This produces a further ambiguity, or perhaps a sense of double meaning: the skips and signal dropouts are at once unmusical elements (that are played with in a musical way) *and* musical elements in their own right. When these traditionally undesirable and certainly unmusical sounds are used to musical ends, they seem to straddle the border between the music's interior and exterior.

It is arguably the music's contradictory double meanings—it both is and is not a traditional performance; the glitches both are and are not part of the music—that supply its compelling tension. The cut-up sounds 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.

Another instance of sounds that seem to straddle the music's interior and exterior is when the sonic imprints that the recording or playback medium leaves with the sounds are used to aesthetic ends. Before the introduction of digital technology, recorded sounds had always been enmeshed in the noises inherent to the mediating process. Digital recording and playback media, on the other hand, seemed to eliminate most of those sounds. In the age of their potential absence, then, the noises from previous recording and playback media that had been eliminated enjoyed a rebirth of sorts, as artists and listeners revitalised and revalued what had formerly been regarded as simply the limitations or by-products of the equipment. For example, as part of a countercultural reaction during the 1990s to the promotion of digital technology's "victory" over low fidelity, several musicians made recordings during this time that featured the sound of pre-digital recording and playback media, and pre-digital instruments and other music equipment. Amplified vinyl noise, for example, can be heard on Portishead's "Strangers" (*Dummy*, Go! Discs/London, 1994), Alanis Morissette's "Can't Not" (*Supposed Former Infatuation Junkie*, Maverick/Reprise, 1998), Massive Attack's

“Teardrop” (*Mezzanine*, Virgin, 1998) and Moby’s “Rushing” (*Play*, V2 Records, 1999). Vinyl noise and other sounds associated with pre-digital technologies’ “limitations” are today very commonly used as aesthetic effects in popular music productions. Yet even though we understand these sounds to be conscious aesthetic choices rather than a casualty of the available technology, part of their aesthetic value lies exactly in their double meaning: they function as musical sounds at the same time as they are thought of as intrinsically related to (outmoded) playback media—that is, as the result of extramusical mediation.⁸

Conclusion

In this chapter, I have used the terms opaque and transparent mediation to describe two analytical and perceptual poles between which there exist many intermediate positions. In both instances, the mediation merges with the sounds. Instead of describing how much mediation is involved, then, these concepts describe the extent to which we experience the mediation as integral to the sound or as applied to the sound. This experience will vary according to who the listener is and/or what the circumstances are, among other things. Transparent mediation implies that the listener’s focus is directed towards what is mediated (the mediation is experienced as merging with the sound), whereas opaque mediation implies that the listener is attracted to the act of mediation itself, *in tandem with* that which is mediated.

While the extent to which the technological mediation involved in a production is perceived as opaque or transparent will vary from listener to listener, I argued that our experience is not completely arbitrary. Mediation is usually experienced as opaque at those moments when it disrupts the spatiotemporal coherence of the music; when it disturbs our mental imagination of the sound source’s “pure” identity; and when it challenges our notion of what is “extramusical mediation” and what is “intramusical mediation”—it is during these moments it gains the most attention. This hypothesis, which I based on theories on ecological perception, further implies that these concepts can be used not only as perceptual concepts but also as signals of alternative musical paradigms. In musical examples such as those analysed in this chapter, the aesthetic potential of the mediation’s self-presentation is scrutinised and its opaqueness celebrated. And what is sometimes described as a lesser degree of mediation should instead be recognised as transparent mediation and, correspondingly, as a rhetorical attribute or aesthetic strategy that is every bit as purposeful as the alternative.

When music is criticised for being inauthentic because it is too reliant upon technological manipulation, it is usually not the *involvement* of mediating technology that is under attack. What is criticised, or alternatively saluted, is instead the musical *aesthetic* that privileges its opacity over its transparency—an aesthetic that seeks the overt and expressive use of editing tools and processing effects, and that endorses the moments when these mediating technologies are allowed to generating unique sounds and carry meanings of their own.

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Discography

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Notes

¹ My notions of “transparent mediation” and “opaque mediation” were first introduced in Brøvig-Hanssen 2010.

² Jay David Bolter and Richard Grusin apply the concepts of transparency and opacity in a fashion reminiscent of Marin in their descriptions of different forms of “remediation” (Bolter and Grusin 2000: 45).

³ For extended analyses of some of the songs discussed in this chapter (Kate Bush’s “Get Out of My House,” 1982; Bon Iver’s “Woods,” 2009; and Portishead’s “Strangers”), see Brøvig-Hanssen and Danielsen 2016.

⁴ For further discussion of the natural and surreal soundscape and ecological perception, see Brøvig-Hanssen and Danielsen 2012.

⁵ For a discussion of how the British producers Hugh Padgham pioneered this “gated reverb” effect using analogue technology, see Zak 2001: 79–81.

⁶ For discussions of the artistic use of pitch-shifting tools, see, for example, Brøvig-Hanssen and Danielsen 2016, James 2008, Prior 2009, and Marshall in this volume.

⁷ Audio files require a large amount of processing power from the computer, and in the 1990s, when processing power was still quite expensive, the computer's playback of audio files often ended in hiccups or crashes due to buffer underruns.

⁸ For discussions of glitch music, see, for example, Bates 2004, Cascone 2000, and Young 2002.