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Sound as Popular Culture

# A Research Companion

edited by Jens Gerrit Papenburg and Holger Schulze

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To the memory of the life and research of Maria Hanáček

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Our work on this volume started in 2009. It all began with a phone conversation, in which we, Jens Gerrit Papenburg and Holger Schulze, discussed our mutual interest in working together on some form of collective research project concerning the state of contemporary research on sound in popular and media culture—a project that could be conducted at the cross section of a variety of disciplines, scholarly and professional practices, aesthetic genres, and everyday experiences. From this starting point, and in collaboration with our great and cherished colleague Maria Hanáček, we developed a project proposal to bring both young and experienced scholars working in these fields in Germany together with scholars from all over Europe, the United States, and Canada.

As soon as the national German Research Foundation (DFG) had granted us the funding for our project as a research network, we started inviting a group of twentytwo researchers to take part in a series of international workshops: at the Berlin University of the Arts and the House of World Cultures Berlin (host: Holger Schulze), at the London College of Music (host: Simon Zagorski-Thomas), at the Academy of Fine Arts Vienna (host: Diedrich Diederichsen), at the Humboldt University Berlin (host: Peter Wicke), at the Leuphana University Lüneburg (host: Rolf Großmann), and at the Istituto Europeo di Design Milano (host: Franco Fabbri). Between 2010 and 2013, we held and heard presentations, working papers, preliminary concepts, revisions, and discussions concerning the definition and the history of sound, both the everyday and the studio aspects of sound, and regarding anthropological, technological, and design approaches to sound as part of contemporary popular culture in the twentieth and early twenty-first centuries. Our thanks go to the network's members and guests: Karin Bijsterveld, Susanne Binas-Preisendörfer, Jochen Bonz, Michael Bull, Claudia Bullerjahn, Thomas Burkhalter, Mark J. Butler, Diedrich Diederichsen, Veit Erlmann, Franco Fabbri, Golo Föllmer, Marta García Quiñones, Rolf Großmann, Thomas Hecken, Anahid Kassabian, Carla J. Maier (neé Müller-Schulzke), Carlo Nardi, Thomas Schopp, Jonathan Sterne, Paul Théberge, Peter Wicke, and Simon Zagorski-Thomas. Thanks also to everyone who contributed a lecture or performance, or who took part in

5 Sound as Musical Material: Three Approaches to a Material Perspective on Sound and Music

Rolf Großmann and Maria Hanáček

Regarding sound as a determining force in today's music, especially in pop music, is not really new. As Chris Cutler, Theodore Gracyk, Peter Wicke, Paul Théberge, and many others have pointed out, cultural industries, mechanical reproduction, and studio work are essential not only for the distribution but also for the musical process of popular music itself. Also, a new perspective on classical music in relation to the media-materialized phonographic representation of "the work" is developing (Ashby 2010). Studio producers and engineers are claiming their part in the creative process, and remixes are making new stars out of people who have never touched a musical instrument. They are using technical devices to play and remix already played music and working with audio workstations with built-in musical knowledge such as graphic interfaces and virtual instruments. In the tradition of *musique concrète* or DJ cultures like techno and hip hop, sound has turned into a concrete (media-) materiality that can be mixed and transformed at a haptic level, as in the case of tape splicing and disc scratching.

However, what is the significance of this materialization of sound, and what does it imply for the understanding of today's musical production and its forms and styles? Focusing on the general cultural impact of "stockpiling music" (Attali 1985) may be helpful, but it might lead to speculative results concerning musical structure itself. We argue that it is not enough to address this issue in terms and categories of cultural change, of enhancing and modifying "real music" or of the novelties of sound effects. Aesthetic strategies such as sampling, recombination, and remix, and forms like tracks instead of songs, clearly show that working with phonographic sound material has become an established practice of making and composing "music" itself. Even sound effects—for example, filtering or reverb—are essential means used in popular music production and live performance—driven by dub, DJ culture, techno, and live electronics.

To take an almost randomly selected example from the charts: the intro of David Guetta's number one hit "Titanium" (2011)<sup>1</sup> starts with a totally dry hook line, the second part of which receives a specially designed reverberation. This virtual space is

cut precisely on the one beat of the hook repetition—and then again for a second time when the intro is over—and then the song starts. Certainly, it is a simple reverb effect, but it is calculated to have a maximum impact on the listener. There is no claim to any real or authentic reference outside of the music itself. The aesthetic strategy can be interpreted in several ways, perhaps as playing with connotations of space or as an extended gated reverb, such as what Steve Lillywhite as producer and Hugh Padgham as engineer originally invented to "fatten" Phil Collins's snare, and which is now applied to an entire phrase in order to create a special rhythmic effect.

For our purposes, the preferred interpretation is not important. Rather, what is remarkable is the method itself—the analytically based interpretation of sound composition. In contrast to its individual usage in a special case, it is possible at a theoretical level that derives from a historical perspective on widely established practices and the systematic description of a technical and corresponding aesthetic strategy in general.

In this case, the historical perspective can be traced back to the Ultraphon (invented by H. J. Küchenmeister; see figure 5.1), an early gramophone (1924–25) with a second pickup shifted by approximately 8 centimeters, creating a constant delay of approximately 100 milliseconds and hence a broader or more spatial sound; or to a theatrical bathroom reverberation effect used by the Harmonicats' hit "Peg O' My Heart" (1947) (cf. Großmann 2013), to the slapback echo used by Sun Records (Elvis Presley, "Baby, Let's Play House," 1955), to gated reverb, multitap delay, and



#### Figure 5.1

How the Ultraphon works (membrane I, membrane II, pickup arm, and horn I facing forward, pickup arm and horn II facing to the side, record) (diagram taken from Kappelmayer 1925, 1104).

many more popular delay FX. Those kinds of effects have been researched extensively, especially regarding their early usage (see, e.g., Doyle 2005) and in relation to recordings of the human voice.

However, this effect leads us to a more fundamental question. Since the human ear normally derives localization, spatial information, and spatial associations from the interaural difference in time, and the delayed reflection ratio in the signal (which is created through sound waves being cast back at the boundaries of a space), reverb and delay effects are usually discussed under the category of space. Correspondingly, in the traditional aesthetics of music, musical spaces are assigned to the respective performance, to the resounding of the musical structure. At the level of an elementary physical-acoustic materiality, space is required for the diffusion of sound waves, but as a rule, its specific form remains accidental as far as the substance of music compositions is concerned.

So, before we come to questions of the (media) material used for designing popular (and of course many types of contemporary) music, we have to take a step back to look at the debate concerning the term "material" and its relation to basic musical substance. Is music made of elaborated melodic and harmonic structures that must be retraced through conscious listening? Or is music an initiated affective process derived from the forces of (acoustic) vibrations? How we answer these questions about the "primary material of music" is essential for the role that media technology can play in musical contexts. Even if we adopt the Solomonic approach of "on the one hand but on the other," we will usually also make some form of judgment that is informed by musical aesthetic traditions of thought.

### Material One: The Sonic

This brings us to an initial concept of material that is closest to sound, the circumstances of how it is generated and distributed and—on the aesthetic level—its corporeal impact. It is based on physical and physiological contexts resulting in the recipient being affected at the level of materiality. This materiality of sound in the sense of "sonic materialism" (Cox 2011), "vibrational forces" (Goodman 2010), or "the sonic" (see Wicke's contribution to this vol.) is presented in an almost demonstrative manner in popular genres such as rock, techno, or dub, and determines their aesthetic form and impact.

This concept of material is in an ongoing conflict with the tradition of music aesthetics for several reasons. Already with Immanuel Kant, as "Materie des Wohlgefallens [the matter of the liking]" ([1892] 1987, §13, 223), music was seen as a vehicle of pure sensual stimulus, the subjectivity of which is at odds with the form of aesthetic beauty. To Kant, because of its immediate proximity to the sensual stimuli, music itself "has less value than any other of the fine arts,"<sup>2</sup> and in his aesthetics it earns only a

subordinate status. The tendency toward placing the formal structure of music at the center as aesthetic substance (which leads to form, idea, or work) is evident in a wide variety of aesthetic theories, from Hanslick to Hegel to Adorno. One possible explanation of the animosity toward sensuality in Western art music is given by Kurt Blaukopf with recourse to Max Weber. Blaukopf (1996) argues that Christian reformist rationalization is associated with a displacement of the body from religious and advanced civilization rituals. In his view, what counts, both in life and in art, is the subjection of "immediate" emotions to a rational order.

This notion of associating societal order with an economy of sensual stimuli leads directly to Theodor W. Adorno's critique of the aesthetic enhancement of sonic material. In the popular music of the mass media, the "blind and irrational emotions" (Adorno [1938] 2002, 295) of being affected are formed to match market demand. Sonic material (in its "certain richness and roundness of sound" and its "rhythmical patterns" that are constructed to fulfill the recipient's "desire to obey" [Adorno 1941]) becomes a standardized product of cultural industry, to which the means of production that shape it belong, in a classical capitalist sense.

This can easily be explained using the example of the Harmonicats' hit referenced above. The desire to transcend an infinite space is "objectified" by the Harmonicats' artificial "supernatural" reverberation effect and becomes sellable as a commodity. At the same time, a modified relationship develops between physicality, sonic material, and traditional musical structure. Physicality—and the same argument can be applied to the digital code of virtual instruments (see Hansen 2006)—always also becomes the object and tool of societal power relations via technical design and embodiment. Especially in this area of affect control, the technical producibility of sound causes a deep mistrust of any nonrational practice that contrasts with the declared level of reflection about musical structures in art music. Adorno argues that regressing to a level below that of critical-discursive reflection, a level that has already been attained, would result in the forfeiture of self-determined, advanced "structural listening," and hence in externally controlled immaturity.

Despite continuing to be of influence today, both positions—on the one hand the reduction of the aesthetic to the *Kunstschöne* of the form, and the culture industry commodity form of sound on the other—tend to have more of a historical character. The strict language of forms in Western art music has long been called into question in the transcultural process of intermingling global music cultures, and its structure-centric score is losing its dominance owing to hybrid forms of controlling and editing audio-material at digital audio workstations. So the notion of a central role of abstract and rationally reflected music structure requires at a minimum an extension and a discussion of the altered historical and technocultural situation. In contrast, regarding Adorno's line of argument, the detailed critique of cultural studies and their successors applies. However, it has hardly resulted in the development of a

theory in its own right in the field of music aesthetics. This is particularly apparent in popular music studies; musical analysis in this field has been repeatedly problematized: owing to a supposed lack of "musical substance," music aesthetics has been deemed unsuitable for examination, and the focus is instead placed on the song lyrics (Tagg 1982).

Further criticism of the "sonic" or "sonic materialism" (Cox 2011) is leveled at its conceptual construction. While the interconnection of physical acoustics with human physicality, perception, and cultural practice allows a hitherto neglected focus on precisely those links, it comes under the suspicion of constituting a new essentialism and an imagery possessing the physical power to explain phenomena (ibid., 157). Concepts such as resonance and synchronization target a description of the "immediate" impacts of vibration and repetitively organized time at a physical level. The sonic is in close proximity to a tradition reducing popular music to its "vibrating matter" and thus bears the risk of physicalizing cultural practice and its resulting aesthetic forms.<sup>3</sup> Affective listening, which was developed most influentially in meditative forms created by Buddhist cultures and which became integrated into a global musical culture in the 1950s and '60s through various influences such as John Cage and the Beatles, is a corresponding mode of listening. "Affective listening is listening to sounds neither as sounds nor as music. There is no as involved, because conscious perception has not yet entered. One feels into the variations of the intensity of sounds, the movement of sonic molecules" (Wang 2012).

Thus an "ontology of vibrational forces" becomes a walk on a tightrope, upon which physical and musical terminology are parallelized and interpreted. Instead of being material in a physical sense, the sonic constitutes a conceptual construction that is difficult to grasp and is a crucial element in the development of research on the perception of sounds that Helmholtz ([1863] 1875) had in mind, but also goes beyond that with regard to a speculative discourse on "nature and matter themselves" (Cox 2011, 157).

### Material Two: Notation (the Score, Phonography, and the Digital Code)

The second concept of material refers to the media of memory, archives, communication and distribution, and productivity. Composing, producing, and performing music is carried out in close interaction with its written codification. The original understanding of art music (as *Tonkunst*) and the work as an aesthetic form is deeply linked to the score as a medial representation of tonal structure. However, after the gramophone won the competition against the musical automata in the 1920s, a new notation was established: *phonography*. Just like the score, this medium effects a transformation of sound structures: temporal events are projected onto lasting arrangements of material. Thus, just like note material, they become the material of memory, reflections, and

artistic work. Now, however, it is the vibration of the air itself, that is, the sonic material described above, that can be recorded and technically reproduced.

Similar to the score which leads to the "geistfähigem Material"<sup>4</sup> of the notes and their structure discussed by Eduard Hanslick ([1854] 1891),<sup>5</sup> this new form of musical writing constitutes a further, more comprehensive material basis for the cultural practice of music. As "secondary orality" (Ong 1982), it simultaneously contains both the aspect of oral transmission and that of written codification, interconnected in a technical process of writing and reading.

Paradoxically, because of this codification of the material into written form, the components of music that could only be transmitted orally in the era of the score are also attributed qualities resembling those of a work of art: "phonographic orality" (Toynbee 2006) is joined by a "phonographic artifact." What results is not a work of art in the nineteenth-century sense (see Goehr 1992), but an object that endures independently of individual and historical contexts that, similar to written music's "opus perfectum et absolutum" of the sixteenth century (see Loesch 1998, 342), can form the starting point for a very diverse range of work concepts. In an "iterative mode" (Toynbee 2006), it can make dynamic changes available as individual artifacts (as in practices such as "versioning," see Hebdige 1987), and it can also record the final products of artistic work that claim to be "works." A wide spectrum of new methods and aesthetic concepts opens up with the cultural work, the technical process of reading and writing itself can be dealt with in artistic work and developed as an object of aesthetic action.

Since the 1950s, groundbreaking innovations in music have resulted from the productive use of this new media material with its indivisible link between *orality, literacy,* and *technology*. Whereas the last innovation in the paper-based notation of Western art music was the "emancipation" (Schönberg [1946] 1975, 258) of dissonance, noise, and chance, experiments to emancipate phonographic media material from its role of simple reproduction and transmission had already begun in the 1920s. The first crooners were very successful in using electronically amplified microphones, while Ernst Toch, Paul Hindemith, and later multitrack artists such as Les Paul worked with timebased manipulations and the layering of phonographic material, and Pierre Schaeffer initiated the aesthetic concept of *musique concrète* with an experimental exploration of the *objets sonores*. In parallel with these more technologically based innovations, blues and jazz made use of phonographic orality to achieve an extension of sound in terms of musical parameters and a dynamization of the concept of a musical work (Großmann 2013).

However, the most momentous innovations have proven to be the result of a transcultural (media) practice of popular music in which reproduction media were reinterpreted as media of production and improvisation in performances: this took place in the context of early forms of phonographic aesthetic strategies in Jamaican dub and New York disco, which are relevant to contemporary music as a whole. Sampling, remixing, and the nonsimulative usage of sound effects that go beyond the traditional written form and the canon of values in Western art music are the result of this particular popular culture (see Rose 1989).

Generative work involving media material has been accelerated by MIDI and digital audio. The operation of music automata and phonographic material has been given a new, standardized, digital form of writing as control data and digital phonography value lists. Here, the materiality of sound undergoes a fundamental process of abstraction. Sound and musical structure can now be written down and handled both as a generative process and as a phonographic image. As audio data, a program code, or a user interface, this writing becomes the object of an extended technocultural practice of music. In this new written form, the traditions of analog synthesizer control and phonographic design are continued in part—for example, as algorithmic computer music or sampling in hip hop—but also broken down into hybrid concepts—for example, in live sequencing. Composition and performance techniques are elaborated and sedimented, for example, in synthesizer presets, in sequencing GUIs, or in virtual studio (VST) instruments and effects.

### **Material Three: Musical Material**

The two material concepts of sound discussed above refer to its physical existence and its technological literacy. The third approach comes from a musical poetics perspective and focuses on the material with which the composer and the performer work.

One historical concept from the era of nineteenth-century classical work has already been mentioned: Hanslick's music aesthetics' *geistfähiges Material*. In contrast, any conceivable concept of musical material today is simultaneously extended and biased by Adorno's music philosophy. "Material ... is what artists work with: It is the sum of all that is available to them, including words, colors, sounds, associations of every sort and every technique ever developed. To this extent, forms too can become material; it is everything that artists encounter about which they must make a decision" (Adorno [1970] 1997, 148). While this very broad definition clearly appears to be suited to an integration of sound, Adorno's theoretical background entails a number of fundamental problems. His proposition of the material's autonomy and immanent tendency, which is to be recognized and implemented by the composer, was the final point of structural thought in western European artistic music, and had already reached its limits in the mid-twentieth century.

As Adorno ([1954] 2002) himself noted, there are several reasons for this concept's failure when applied to twentieth-century music, or to popular music. Here, material development is reduced to an immanent logic of tonal structure that can be applied

neither to extended concepts of musical composition, as with John Cage, nor to the aesthetic strategies for the processing of already recorded music in DJ culture. Even though an awareness of the perhaps possible "gramophonic montage" in the context of film montage technologies can be attributed to him (Levin 1990, 46), for Adorno, phonography was purely a sound-capturing medium and was not in any way conceived as a means of aesthetic production.

The culture industry's usurpation of technical reproduction media and their material described above is a further problem. Adorno generally understands them as tools of an economically oriented mass culture. Correspondingly, while popular music is discussed at the sound level under the heading "musical material," as a standardized mass commodity (Adorno 1941), it simply remains a means of affect control. If the concept of musical material is to play a meaningful role in today's discourse, new perspectives will be required for these problematic issues.

Nevertheless, the proposition of progress in musical material generally makes sense, as it allows for the identification of aesthetic methods and a description of their historical development. However, the assumption of any uninterrupted linearity or single historically valid status of material is misleading. Instead, a complex combination of lines of development and breaks in continuity can be observed that are indeed possible to accurately describe, for example as forms of "phonographic work."<sup>6</sup> Those kinds of lines of development, the courses of which are becoming increasingly transcultural in a globalized media culture, include both the development of sonic material in the sense of the first concept of material introduced here and the new written form of phonographic material.

An appropriate view of popular sound culture focuses on the dynamic aspects of material development in addition to its standardization. While it principally remains in the societal field of tension between power, hierarchy, and identity, it can also be conceived of in a positive sense. If affecting is understood no longer as a passive process but as an active and dynamic one, it can be discussed as "affectivity," as the "capacity of the body ... to deploy its sensorimotor power to create the unpredictable, the experimental, the new" (Hansen 2004, 6). Here, the issue is not that of subjecting affects to the hierarchies of instrumental rationality in societal power, referred to by Adorno as the dark side of enlightenment. On the contrary, the technical rationality sedimented in the machines can become the object of sensory experiments and aesthetic acquisition. Thus, very much in the sense of sonic materialism, instead of representing musical symbols or an assigned meaning, the cultural practice of handling, its forms of production and adoption become musical knowledge themselves. Sonic effects lose their significance as manipulators of a real sound and turn into the means of designing phonographic work, synthesizer presets are tried out under the extreme conditions of the "out of control" status, and loops become experimental arrangements of a breakbeat science of sonic experience beyond symbolic reference structures (see Schloss 2004).

However, the concept of sonic materialism also reduces the character of the material to a preconscious practice separated from cultural reflection. Its dynamic, which Cox (2011, 157) rightly stresses as an argument against the accusation of essentialism, is by no means random, but is formed within lines of traditionalism that can definitely be referenced and named. In the micro range, the periodic ordering of time in music comprises the *vibrations*, and in the macro range the *rhythms* (in corresponding metaphors of *effect, resonance*, and *synchronization*—see above). Both aspects are culturally preformed and are highly differentiated. Rhythms are a codification of movements, of performed or stylized dances, or forces of motor synchronization. They contain both physical knowledge and the knowledge of rituals and conditions of social significance. The new treatment of temporal circumstances in program control data and digital phonography that can be edited to the millisecond is developing rhythmic orders out of these traditions (see Großmann 2014). This happens in technocultural configurations that are themselves capable of reflection, and also in their methods.

Returning to the example with which we began, if delay effects are understood as sedimented material in creating music, they attain a certain degree of independence (if not autonomy) from the context of simulating the real spaces from which they have evolved. Reverb and delay have "emancipated" themselves as musical material. The issue is no longer that of musical imaging's credibility, authenticity, or high fidelity, but of a meaningful aesthetic application. In this field, popular music can be composed in a highly differentiated, artful, and experimental manner. In Squarepusher's electronically produced "My Red Hot Car," for example, there is no continuous "natural" space. Passages that are completely "dry" in their electronic creation alternate with very precisely dosed reverb and delay passages. Spatial perception and association become independent aesthetic means. Here, the artificial design of musical (not real) space assumes a status similar to that of tonal design. Just like notes and chords, as melody and harmony became the geistfähiges Material of the nineteenth century, the forms of effects sedimented in apparatus, software, and application strategies are becoming the musical material of the sound culture of the twentieth and twenty-first centuries. It is thus necessary to rethink the concept of musical material in popular and contemporary sound cultures: as sedimented and established forms of culturally formed sonic material, as material of phonographic notation and program codes, and as material accessible in hybrid technocultural configurations.

### Translated by Mike Gardner

### Notes

1. Produced in 2011, Guetta's "Titanium" was a top hit on the UK charts in 2012.

2. Kant ([1892] 1987). Original: "weniger Werth als jede andere der schönen Künste," §53, 328.10-11; cf. Hanáček 2008.

3. "Vibrating matter is the condition to which certain forms of music (rock, most frequently) have been reduced, in descriptions that seek to account for the transformative impact of such musical forms on human bodies" (Straw 2012, 230).

4. "Geistfähiges Material" is translated by Gustav Cohen as "material capable of receiving the forms which the mind intends to give" (Hanslick [1854] 1891, 72).

5. "The crude material which the composer has to fashion ... is the entire scale of musical notes and their inherent adaptability to an endless variety of melodies, harmonies, and rhythms" (Hanslick [1854] 1891, 66–67).

6. See Großmann's "Phonographic Work," this vol.

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