Bodily Expression in Electronic Music
Perspectives on Reclaiming Performativity

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8 Two Kinds of Physicallity in Electronic and Traditional Music

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Suddenly a violent noise leaped at them from no source that he could identify. He gasped in terror at what sounded like a man trying to gargle while fighting off a pack of wolves.\(^1\)

I will examine two very different ways in which listeners’ experiences of musical works sometimes involve physical actions or events—in many instances emotions and other mental states as well. Both concern music that is often described as ‘expressive’. But they are so different that I question whether it is reasonable to subsume them under any single category, whether, for instance, they are aptly characterized as two kinds of expression or expressiveness. The first consists in the impressions appreciators have of physical activities or events that produced the sounds they hear. The second is the tendency of listeners to engage in physical activity themselves in response to music.

I.

How a work of art, or a performance, appears to have come about often has a lot to do with its interest, its aesthetic character, and the experiences of appreciators.\(^2\) This includes psychological facts about the artist—her apparent objectives in creating a work, and facts about her attitudes, personality, or mood that it seems to reflect. It also includes (in many cases) apparent physical causes; a work or performance may seem to have resulted from actions or events of one or another sort.

A few quick examples: whether a story seems to have been meant to be funny, or not, is often important. A story told with a straight face may be funnier than it would be otherwise. Or its humor might be so subtle that audiences miss it. A story with a serious moral might undercut its purpose if the storyteller gives the impression of trying to be humorous. Alternatively, the apparent frivolity might make palatable to readers an unpleasant, serious message that the story aims to get across. That a picture was painted in a childish style, as though by a child, may give it a kind of charm that it wouldn’t have otherwise (Jean Dubuffet).

In musical performances (and in ordinary life as well), there are clashing, clanging, scraping, caressing, and wailing sounds—sounds that sound as though they were made by crashing, clanging, scraping, caressing, wailing actions or events. Violent or gentle sounds seem to be sounds of violent or gentle happenings.

The difference between the impression that sounds we hear were produced by a person’s deliberate actions, actions of banging or bowing or blowing or vocalizing, and the impression just of sounds caused by physical events of certain kinds, objects scraping or banging against one another, whistling wind, and so on, this difference is of first importance. Insofar as our impression is of the former sort, we might be said to be recognizing something like a fictional character in the music. It may be reasonable to say that the music is (minimally at least) representational, that the sounds of a performance represent or depict themselves as having been made by a person of a certain kind.

Appearances need not correspond to reality, of course; the impression a work gives of its genesis may not be veridical. But appreciators are often interested in the appearance itself, regardless. (I do not rule out their being interested in reality, in how a work actually did come about, nor do I assume that this is not an ‘aesthetic’ interest. But interest in its apparent sources is not itself interest in its actual sources.) The score of William Kraft’s percussion piece *Momentum* contains the notation “run amok”. I doubt that this instruction is meant to be taken literally. More likely the performers are expected to produce sounds that merely seem to be made by people running amok. Perhaps they are expected also, in a live performance, to behave so as to look as though they are running amok.

Interest in appearances regardless of their veridicality is an interest of a special and somewhat unusual kind. In many or most ordinary (non-artistic) contexts, appearances are important primarily for what they might indicate about reality. A long tradition in philosophy, going back to Plato’s Cave, wrestles with questions about the legitimacy of inferring how things are from how they appear—as though that is why appearances are important. Aesthetic contexts are different. Appreciators notice and enjoy appearances more or less for their own sake, without necessarily even wondering whether or not things actually are as they appear.

This fact has two important consequences. First, we recognize, attend to, care about conflicting appearances in works of art without feeling any particular need to resolve the conflict. Consider the joke told with a straight face. The impression of seriousness and that of joking are both important; to fully appreciate the story, we must be sensitive to both. It may be obvious, in the end, that the storyteller was not serious, that she meant only to be joking. But we miss something important if we ignore or fail to detect the story’s seriousness. What appreciators are likely not to do is to weigh the two contrary appearances and replace them with a single all-things-considered appearance: ‘All in all, she seems to have been joking rather than being serious’.

Given that multiple conflicting appearances are to be noticed and often relished, things can be fascinatingly complicated. A joke told with a straight
face might also be intended to make a serious point. One's first, most immediate impression may be that the speaker did not mean to be funny (the 'straight face'). The air of seriousness may be exaggerated, however, making it seem that the speaker did intend to be funny after all. Finally, it may be apparent on reflection that the speaker meant to be making a serious point, that she intends the story to have a serious moral. The speaker tells an apparently serious story in a way that makes it seem to have been meant to be funny, evidently intending thereby to make a serious point. Jonathan Swift's *A Modest Proposal* may be an example of exactly this.

The second consequence of the fact that appreciators attend to appearances for their own sake is that the appearances that matter include ones that, on pain of circularity, *could not* constitute a reason for thinking that things actually are as they appear to be. Lying in a tent in the wilderness, someone tells me that there is a grizzly bear outside. 'That is a bear!' she says, referring to what until then sounded to me like a squirrel scrambling up a tree or branches blowing in the wind. These sounds now have a sinister, scary quality. They seem to me to have been made by a bear; my impression is of a bear prowling around looking for food, bumping into vegetation, and so on. Insofar as my prior, independently acquired belief that there is a bear in the camp is responsible for the (auditory) appearance of a bear, that appearance gives me no reason to think that the sounds are those of a bear. (I may or may not realize that this is so.) Nevertheless, the impression that they are bear sounds is part of my auditory experience. If, perchance, I am not especially interested in what actually is the case, whether the sounds I hear were or were not actually made by a bear, I may be interested in, I may notice and enjoy the bearish quality of the sounds more or less for its own sake.1

The point I just made is a special case of a more obvious one. What we know or believe or have internalized about how certain kinds of things are actually produced has a lot to do with how a particular one seems to have been produced. A loud sound seems to be the result of more violent happenings than a softer one does because we realize (implicitly) that violent actions or events actually do, ordinarily, produce louder sounds than gentler ones do. It is largely because we have observed the antics of pianists in making piano sounds, not to mention our own attempts to play the piano, that we have the impressions we do, when hearing a recording of a piano sonata, of the performer's antics in making the sounds we hear. My present point is that how a particular sound sequence seems to have come about may depend on one's prior knowledge of how those very sounds did come about, as well as on prior knowledge of how other similar sounds normally do come about. The appearance of sounds as evidence for the reality in one case but not the other.

Michel Chion distinguishes between *causal* listening—"listening for the purpose of gaining information about the sound's source", and *reduced* listening—"listening for the purpose of focusing on the qualities of the sound itself (pitch, timbre, etc.) independent of its source or meaning."

... * * *

It is obvious that the apparent genesis of much electronic music is very different from that of traditional acoustic music. One might suppose, however, that there isn't much difference in the case of electronic music that mimics traditional acoustic instruments. Don't electronically generated sounds that successfully reproduce sounds like ones made by musicians playing violins or accordions or whatever sound as though they were made in those ways? This ignores the influence awareness of how sounds are actually made has on how they seem to have been made. Listeners' experiences may include an impression that the sounds were made by violins or accordions, in any case, but this impression will mix with other contrary ones, for listeners who have some awareness of their actual genesis (even if little more than a realization that violins or accordions were not involved). I suspect that the interactions between the different impressions are important. (I am not considering, now, recordings of actual violin or accordion music, or electronic music that makes recognizable use of such recordings.)

What about entirely unrecognizable sounds generated electronically? The ethereal, disembodied, mysterious character often attributed to such sounds is no doubt largely a matter of the impressions listeners have or do not have about their sources. At the premier of his *Hyemen*, Stockhausen remarked that:

Many listeners have projected that strange new music which they experienced—especially in the realm of electronic music—into extraterrestrial space. . . . Several have commented that my electronic music sounds "like on a different star", or "like in outer space". Many have said that when hearing this music, they have sensations as if flying at an infinitely high speed, and then again, as if immobile in an immense space.1

It may be unclear whether listeners—I am thinking now about naïve listeners, with only the foggiest idea of actual electronic music production—simply lack any sense of how the sounds were generated, or whether they do have an impression of their origin, an impression of their having come from nowhere, out of the blue, of their lacking any physical cause (or perhaps any cause at all). There may be no fact of the matter about this. In either case, I think it would be a mistake, misleading anyway, to deny that the music is 'expressive'. The *ethereal, disembodied, mysterious* qualities are aesthetically important whether or not they count as 'expressive' properties. The music may inspire awe if not empathy. It might be especially appropriate in religious contexts (compare church organs). There may or may not be such a thing as
totally "disembodied" music. But music may be strikingly lacking in one particular kind of embodiment, and this absence may be immensely important aesthetically.

Some justification for denying that the music is expressive, insofar as expressiveness depends on the impression it gives of the generation of its sounds, might come from the fact that the apparent genesis of the sounds doesn't depend much, if at all, on their specific sonic qualities—beyond their merely lacking sonic qualities indicative of familiar sound sources. Changes of timbre, pitch, volume, attack and decay properties, and so on make little or no difference (so it seems to me, anyway) in this respect: the sounds do not seem to have any particular physical sources or seem not to have physical sources at all—no matter. I doubt that listeners, naïve ones anyway, follow the music's expressive, emotional development as they often seem to do (sometimes with empathy) in the case of acoustic music—insofar as the emotional development consists in impressions the music gives of the expressive behavior of a creator of the sounds. They may of course follow the progression of sounds intently for other reasons, and there may be expressive or emotional development of other kinds.

Aged, I would expect that the situation is somewhat different for sophisticated listeners with more or less detailed knowledge, more or less internalized, either of how electronic sounds of the kind one hears are ordinarily created, or how the very sounds in question actually were. But, still, the sonic properties of the various sounds will not make much difference to what physical actions produced them—maybe a difference in which keys are pushed, or in what order (on an organ, which stops are pulled out). And always, there are complications. Don't louder, faster, or familiar electronically generated ones, seem to result from more violent events than softer ones do, and quick successions of different sounds from faster moving successions of events? Probably. But in my experience, at least, these impressions are vague, muted, at best, when I have no sense of what kinds of events produce the louder or softer sounds, or the sounds that succeed one another more or less quickly.

Even naïve listeners are likely to have an impression of psychological states of the music maker—whether she was trying to be funny, for instance, or wanted to fool listeners about where the music would be going next—or whether the music is improvised or composed. No doubt sophisticated listeners will have more detailed impressions of this kind than naïve ones do.

II.

I feel intimate with the music, more intimate than I feel with the world of a painting. The world of a painting . . . is out there, something I observe from an external perspective. But it is as though I am inside the music, or it is inside me. (Kendall Walton, 1994)
Reification

Italo Calvino, in ‘A King Listens’, introduces the first of these, reification:

The music comes and goes, in gusts, it oscillates, down in the rumbling groove of the streets, or it rises high with the wind that spins the vanes of the chimneys.

And when in the darkness a woman’s voice is released in singing... What is it?... That voice comes certainly from a person...; a voice, however, is not a person, it is something suspended in the air, detached from the solidity of things.7

Calvino brings out our tendency to think of sounds, to experience them, as things (or stuff) that travel to us, to our ears, from objects or events that emit them, from bells and trains and gurgling brooks and people speaking or singing. Sounds have lives of their own. They are distinct from and independent of their sources, of the things or events that emit them. They have their own spatial locations, as they move away from their sources. They have their own temporal dimensions as well: a sound arrives at our ears after the event that gave rise to it; in some cases perceptibly after the event. Sounds fill rooms, and travel across streets. Sights don’t do that.

But smells do. A smell might fill a room, or be carried by the wind away from the skunk or the incinerator that emitted it. A smell, like a sound, may be in a different place, and also a different time, from that of its source.

What about sights? What we call ‘sights’ are things like the Grand Canyon, the Eiffel Tower, a sunset.8 We think of ourselves as seeing objects out there, ones that stay out there while we examine them visually. We do, sometimes, speak of seeing glimmers, flashes, reflections. These are distinct from their sources. But they are on or next to their sources, even if they are not parts of them; they are out there, at a distance from us. And usually it is the object itself that we think of ourselves as seeing. (We know that light travels from the objects we see to our eyes. It enables us to see objects. But we don’t usually think of ourselves as seeing light.)

It isn’t clear that there is a mode of visual perception analogous to reduced listening, in Chion’s sense (what some call ‘acoustic hearing’).9 If we subtract from our usual visual experiences the physical objects that we see, what would be left to count as objects of our visual experiences?

Physicality

If sounds come to us, what do they do when they get there? Here is a thought: they enter our bodies and animate us—that is, we think of, or experience sounds, some sounds, as doing this.10

That they animate us, that some musical sounds stimulate or encourage physical behavior is obvious (though until recently musicologists have not paid much attention).11 One of the main objections some people had to jazz

in its early days was based on its tendency to make people move. “After impudence comes the determination to surprise: you shall not be gradually moved to the depths [by jazz], you shall be given such a start as makes you stagger all over”.12 The National Dancing Masters Association adopted the rule: “Don’t permit vulgar cheap jazz music to be played. Such music almost forces dancers to move jerkily half-steps and invites immoral variations”.13

It is not just jazz (or rock ‘n’ roll, etc.) that makes people move. We march and dance to music of more sedate sorts; we tap our feet and sway with it. We are supposed to control ourselves in concert halls, but the inclination to move is there; our muscles contract. The pianist and composer Oscar Levant tried to explain his way out of a speeding ticket by pointing out that “You can’t possibly hear the last movement of Beethoven’s Seventh Symphony and go slow”.14

Levant was speeding to a steady, insisted rhythm, a hurried one. You will remember the irregular, unpredictable crashes in Stravinsky’s Rite of Spring. This passage makes me feel off balance—like walking downstairs without knowing how many steps there are.

That sounds tend to produce immediate physical reactions is an obvious commonplace; I didn’t need to belabor the point as much as I just did. But it is remarkable. We can begin to appreciate how remarkable it is by noting that nothing very similar occurs in the visual realm. Visual objects have ‘rhythms’ also—at least we describe them thus. Here is a regular visual rhythm:

Figure 8.1 Agra Fort. Photograph © Kendall Walton 2010.
There is some point in this comparison. We will be reminded of the idea that architecture is frozen music. But the comparison is limited: architecture doesn’t cause foot tapping, not even frozen foot tapping. We don’t march or dance or tap our feet to Paul Klee’s Camel in Rhythmic Landscape (Figure 8.2), although we see the analogy between it and the Beethoven; we see that there is one.

Figure 8.3 has an irregular rhythm. Again, we see something of an analogy with the Rite of Spring passage. But we don’t feel the rhythm in the same physical way.

These are still pictures. Perhaps moving ones will approximate the physical effects of musical motion? Take a rhythmically regular screen saver.

We can appreciate the analogy with regular musical rhythms. But we don’t march or tap our feet.

A quick experiment: compare two video clips (thanks to Alycia Warren), available here: http://musaetik.kug.ac.at/institut-14-musaetik/publikationen/sammlbaende/bodily-expression.html.

Clip #1 is a regular rhythmic alternation between a blue-black movie and a red-white one, without sound. This doesn’t make me want to march or dance or tap my feet. Clip #2 adds sound—a clicking metronome, in 2/4 time. I at least find this a little more encouraging of movement.

Why the difference? And can we give any sense to the idea that it is by entering our bodies that sounds make us move, animate us? This is an empirical question calling for empirical research. But I will speculate. A clue may come in the observation that low frequencies have a greater tendency to get us moving than higher ones do. We are more likely to move and groove with the thumping of a bass than the twittering, even rhythmic, twittering, of a piccolo. In the case of low-pitched tones especially, we feel the vibrations. We experience sounds somatically, as well as through our ears, especially if we are in contact with a vibrating solid object linking us to the sound production, such as a dance floor. You will remember Evelyn Glennie, the percussionist who lost most of her hearing by the time she was
a teenager. She is deaf, but not insensitive to sound. "Hearing is a form of touch", she said, "you feel it through your body, and sometimes it almost hits the surface."

One doesn't have to be deaf to feel sounds, to experience them somatically. I expect that most of us fail to realize how much of our detection of sounds—even not very low-pitched ones—is somatic rather than aural. Experiments have shown that much of what we call taste is actually smell. (People have trouble distinguishing potatoes and apples by taste, when their noses are pinched.) I don't know of similar experiments in the case of sound. But I wouldn't be surprised if a significant part of what we think of as hearing is actually feeling, experiencing sounds somatically. We can't help noticing our somatic experiences of very low-frequency sounds. We may be only vaguely aware of feeling the vibrations of mid-range sounds. Perhaps very high-pitched sounds are felt almost not at all.

These somatic experiences, however vague our awareness of them, help to explain the impression that sounds not only come to us, but are experienced as being inside us, in a way that visual objects aren't. Perhaps we identify sounds with physical sensations, on a par with itches, pains, and adrenaline rushes, sensations of muscles tensing or relaxing, and so on, all of which are 'inside' us and often give rise to physical behavior. Or maybe we (implicitly) identify sounds with the vibrations that we feel, the sensations, the feelings in our muscles, these being sensations of movement or incipient movement, rather than causes of movement. Probably our experiences are simply not definite enough to admit of precise characterization. But that is not needed, I think, to see that listeners' somatic experiences encourage the idea that sounds enter their bodies and become a part of them.

My speculative hypothesis—to be slightly more explicit—is that somatic experiences of sound, feelings of vibrations in our bodies, cause tendencies to tap our feet, march, dance, and so forth. I won't speculate about the mechanisms involved beyond proposing that the causation is relatively direct and mechanical (physiological, neurological), and does not involve anything like (even implicit) cognition, or imaginings or deliberate actions.

This, I said, is speculation. But it is not entirely without empirical support. If we are willing to grant, on the basis of our own experience, that low-frequency sounds have a greater tendency to encourage foot tapping or marching than higher-frequency ones do, and also that the vibrations of low-frequency sounds are felt more strongly than those of high-frequency ones, we have a correlation between somatic experiences of sounds, relatively intense ones anyway, and physical responses. This correlation suggests a causal relation. The hypothesis also nicely explains the fact—which I assume is obvious enough—that music has a much greater tendency to elicit physical activity than the visual arts do, absent other explanations (I will sketch some in a moment). We experience sounds, but not sights, somatically. Again, a correlation suggestive of causation.

The somatic perception of sounds goes some way toward explaining what has seemed to many the extraordinarily direct and immediate way in which music affects our emotions. Somatic sensations themselves qualify as what psychologists call 'affective' responses. Part of what we feel, when we feel rage or anger or fear or love or contentment, is sensations of muscles tensing or relaxing. Physical sensations constituting the perception of sounds are easily imagined to be feelings associated with full-blown emotions, when we imagine a situation in which the emotions in question are called for. They are easily imagined to be feelings of rage, when one imagines something to be angry at, or fear when there is something to be afraid of. They may actually be feelings of rage when one acts merely in anger at something. An important function of music accompanying narrative works—film, theater, opera—is to generate somatic sensations, sensations constituting our perception of the sounds, which we then construe as feelings of anger at the bad guys, or disgust at their evil doings, or worried concern for the good guys. This is a contribution that the piano or organ player in silent movies makes, a job taken over by sound tracks, often electronic ones, in latter-day talkies.

One more speculation: why do rock musicians so often want their music to be as loud as possible? Surely not to make for dramatic contrasts between loud and soft passages; what needs explaining is their dialing up the volume of an entire performance, soft passages (if there are any) included. The objective may be to maximize the intensity of listeners' somatic sensations, and so the intensity of their affective/emotional responses. If these speculations are on the right track, it would be a serious mistake to think of feeling sounds, experiencing them somatically, as merely a backup system, a convenient alternative means of access to sounds for the hearing impaired, but redundant for the rest of us. I suggest that somatic perception is an integral part of ordinary experiences of sound, one that supplements in crucial ways, rather than duplicates, auditory perception. Daniel Levitin is seriously mistaken, I believe, when he claims that our access to the "auditory world" is almost entirely through the ear drum.10

If somatic perception of sounds is crucial in listeners' experiences in the ways I have described, this would seem to apply equally to electronic and acoustic music. It shouldn't matter how the sounds are produced, or whether they are familiar ones with recognizable sources. It shouldn't matter what impression we have, if any, of a music maker or sound creator. But the contrast between music, whether electronic or acoustic, and the visual arts (not to mention literature) is profound. We do not experience sights somatically, in anything like the way we do sounds. Visual and literary works of art do frequently cause affective, emotional states in appreciators, and also elicit physical responses (tensing or relaxing of muscles, for instance, if not foot tapping and marching). Music is not unique in this respect. But the mechanisms by which pictures and novels and movies (apart from their sound tracks) have these effects
do not seem to involve anything comparable to somatic perception, and many of them seem to be indirect in ways that somatically perceived music is not.20 Many of these responses are to characters recognized in works of fiction, or to apparent artists. Watching a film or reading a novel, we may respond emotionally and physically to what we understand about the characters or apparent artists and their situations. Our responses are not always cognitively mediated, however. There is more or less automatic motor mimicry: we may unwittingly adopt the posture of a depicted character, or mimic her facial expression, or tense our muscles as we watch a dancer using hers. Emotions or moods of characters can be infectious. Appreciators can catch them from characters or apparent artists, via whatever mechanisms, I suppose, are involved when we catch them from real people. There is also something like motor mimicry in response to inanimate objects, rather than persons (fictional or actual) or anything we think of as being sentient—mimicry of the shape or movements of objects. Observing the Tower of Pisa, one might find oneself diagonally inclined, in ‘sympathy’.21

Music employs a variety of devices for inducing physical and affective responses in listeners, including most of the ones just mentioned, which it shares with the visual arts. There are responses to apparent music makers: listening to sounds seemingly made by a person acting in an overly aggressive manner, a listener may feel intimidated. The impression of a calm producer of sounds may be calming. A pompous apparent music maker may be disgusting. These affective emotional responses are likely to have physical manifestations, in the case of music as in those of the visual arts and literature, one’s muscles tense or relax. Probably there is something like infectious emotions or moods, and motor mimicry.

My hypothesis is that somatic sensitivity to sounds, feeling vibrations, is responsible for physical reactions in a very direct way, one not involving any (even implicit) cognitive processes, or recognition of characters or apparent music makers, or anything like motor mimicry or empathy with either a sentient being or an inanimate object.

Some have argued that proprioception, the perception of the position and movements of our limbs, is important aesthetically—in appreciating dance, for instance, or architecture. Somatic experiencing of sounds, feeling vibrations, is not proprioception (although it might aid us in detecting the positions and movements of our limbs). Those who regard proprioception as part of aesthetic experiences often take it to result from or consist in a kind of empathy with (for example) a dancer or a building; one mimics with one’s body the movement or stance of the object of appreciation.22 Feeling vibrations in our muscles when we listen to music, I am suggesting, is more direct and automatic than this. It is not that we observe and somehow take on the physical stance or motions of something outside of us.

One final note: Daniel Levitin wrote that “Music communicates to us emotionally through systematic violations of expectations”, obviously taking a cue from Leonard Meyer.23 I suggest that somatic perception of sound—an important feature, I believe, of our experiences of both acoustic and electronic music—is a powerful vehicle of emotional “communication” that has nothing to do with expectations, let alone violations of expectations. This is important. Traditions and standard formulae internalized by listeners are largely responsible (arguably) for the expectations operative in music of the common practice period. Electronic music (and contemporary music of various other kinds) does not often exploit these traditions or formulae, and listeners may not have internalized other newer ones that the music might utilize. Experiencing the music somatically can work emotionally on them nonetheless.24

NOTES


9. Thanks to Alicyn Warren.

10. ‘Seeing is like touching, hearing like being touched. But the touch of sound does not stop at the skin. It seems to reach inside of us and to attenuate along with the distinction between here and there the more basic distinction.
between inner and outer" (David Barrows, 'On Hearing Things', Musical Quarterly 65/2 [1980], 180–91; 182–4). "Musical sound has direct access to the soul. It finds there an echo, for man hath music in himself" (Wassily Kandinsky, Complete Writings on Art [New York: Da Capo Press, 1994], 161).


12. Clive Bell, 'This De Jazz', New Republic 21 (September 1921), 93. Thanks to Mark Katz.


16. "I found it quite hard to pick up a beat—or rather, to 'stay with the beat'—just from watching" (Alicyn Warren, personal communication).


18. Alicyn Warren (personal communication) pointed out that participants in Silent Raves dance wildly to music transmitted through individual headsets. If the music, which they hear but scarcely experience somatically, nevertheless provokes movement, this would seem to suggest that my speculation is wrong. But it is possible that suggestion is at work in this case—recognizing what they hear as something that ordinarily would encourage movement, the Silent Rave dancers expect to be moved, and so are moved. (Compare the sight of a glass of whiskey might make an experienced heavy drinker feel sick.) Perhaps also the merely heard music might not stimulate behavior as strongly, or as automatically, as somatically experienced music would.

19. "Virtually all of your impressions of the auditory would come from the way in which [the ear-drum] wiggles back and forth in response to air molecules hitting it" (Levin, This Is Your Brain on Music, passim, p. 102).

20. Visual works no doubt have some relatively direct influence on viewers' physical states (if not their behavior). Certain colors may be exciting, or calming, for instance. Thanks to Richard Daniel Blum.

21. This probably would be an instance of 'empathy', in its original sense, when it was introduced into English as a translation of Einfühlung. Cf. Theodor Lipps, Ästhetik (Leipzig: Leopold Voss Verlag, 1903). Vernon Lee, The Beautiful: An Introduction to Psychological Aesthetics (Cambridge: Cambridge University Press, 1913).


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