

Letting the Body Decide: Creativity, Gesture and Musical Embodiment in Space as a Virtual Instrument¹

Deniz Peters

My aim in this paper is to argue towards the idea that the body can be involved in decisions on issues of musical interpretation *by way of listening*, and to what extent and how this is so. For this, I build up a concept of listening that is situated between those of cognitive and cultural approaches. From there I address bodily implications in the aesthetic action that occurs in musical experience, discussing a sonic tactility that appears when performing in space as a virtual musical instrument as configured in a recently concluded research project.

-> **play 3 videoclips** illustrating dancers' improvisations in space as a virtual musical instrument as part of the Embodied Generative Music project. Ex. 1 is a passage from Anna Nowak in the Lachenmann scenario (1 tracked point on arm); Ex. 2 is Magdalena Chowaniec improvising within the Speed scenario (15 tracked points); and Ex. 3 is Chowaniec in the Schwitters scenario (1 tracked spot on left arm).

Ian Cross, in his recent 'Listening as Covert Performance',² draws together a wide range of insights on cognitive activity and interactivity taking place during the process of listening. For example, he refers to research showing that parts of the brain involved in the planning of motor behaviours are active in listening, including areas planning laryngeal and tongue movement. With this, he is one of a number of authors relying on neuroscientific research regarding so-called 'offline' participation of brain areas concerning motor action, like Arnie Cox and Rolf Inge Godøy. The covert activity in listening highlighted by Cross is one that is on the brink of overt action.

¹ Save some slight alterations, this paper was held on 15 July 2011 at the 1. CMPCP Performance Studies Network International Conference, Faculty of Music, University of Cambridge.

² Ian Cross, 'Listening as Covert Performance', *Journal of the Royal Musical Association* 134, Special Issue 1, 67–77.

One might encapsulate Cross's idea of active listening in the image of being on the verge of moving or singing while listening.

To call this covert process 'performance' rather than, say, 'understanding',³ seems justified by the activity that it is linked to, even though this activity is cognitive and mostly hidden from view. To call it 'covert' implies an overt counterpart: its externalisation in spontaneous acts of singing or dancing familiar from popular music audiences, remnants of which appear in classical concert audience behaviour only as sudden jags, tapping, finger twiddling or whatever else members of an audience half consciously engage in that subverts their restraint – supposedly bursting forth outwards in the privacy of listening at home. Cross suggests that this response, however active, is “reflexive”, “involuntary”, and “automatic”. Hence his explanation does not encompass that which is given to human volition.

At this point Cross plays the ball over to – but does not actually lead through to – sociological and anthropological accounts that conceive listening as mediating cultural activity. It is a mark of cultural activity that it includes intention. The latter sociological and anthropological approaches – well represented in Georgina Born's 'Listening, Mediation, Event',⁴ which is her response to Cross's article – place emphasis on the performativity of listening. They do this, however, mostly without themselves tying their attention on the mediatory nature of music back to a detailed account of its aesthetic appreciation. Aesthetic appreciation is devoted to music's concrete features. It presupposes a kind of listening that is closely aligned with and attentive to the musical detail, such as described by Jerrold Levinson in his essay on 'Musical Chills', as a mode of listening that stays “in contact with the music in its full particularity”.⁵ Such listening exceeds a mediatory and culturally orienting role in that it is an *experience*. While Born *names* this experience, calling it “transformatory”,⁶ what remains to be further articulated is what musical qualities may contribute to its

³ Understanding does not *need* to be viewed as something entirely intellectual, of course; see for example Jerrold Levinson, *Music in the Moment* (Ithaca: Cornell University Press, 1997).

⁴ Georgina Born, 'Listening, Mediation, Event: Anthropological and Sociological Perspectives', *Journal of the Royal Musical Association* 134, Special Issue 1, 79–89.

⁵ In Jerrold Levinson, *Contemplating Art: Essays in Aesthetics* (Oxford: Clarendon Press, 2006), pp. 220–36, esp. 221.

⁶ Born, 'Listening, Mediation, Event', 88.

eventuation, and in what way their particularities matter. Here is Born's superb characterisation of the conditions surrounding cultural mediation:

There is no musical object or text whether sounds, score or performance that stands outside mediation [...] By producing particular engagements, confrontations or combustions between musical objects and subjects [...], musical experience can generate affect and create transformative effects. [...] In this sense musical experience can take the form of an *event*.⁷

What I seek to show, in turn, is that there is a concrete point where reflex engagement in listening shifts over into creative engagement, that is, into the performativity of performance (the "event"), and already into the performativity of listening (and I understand audience creativity that Philip Alperson refers to in his article 'Creativity in Art'⁸ in precisely this way). That point is where intentionality enters into the cognitive complexities of covert performance. For this, I shall enter the space between the cognitive and cultural standpoints, by closely considering the role of the body as hosting cultural mediation, in the process now widely called 'embodiment'. In the bigger picture, the question of the connection between the cognitive and cultural standpoints also regards the question of the explanatory gap between form and content as expressed in the division between formalist and hermeneutic approaches to musical analysis.

In short, I will be regarding the listening body. To regard the listening *body* means to regard it as experienced, as felt, or as what phenomenologists commonly call the 'lived body'. Decisions affected by the lived body are ones through which artists act, or through which society acts on us all as listeners, which is what makes them performative decisions. The taking of these decisions is not intellectual, at least not *only* intellectual; we might intellectualise them, rethinking or conceptualising decisions taken in rehearsal. But during an *actual* performance, performers do not *think* them over (and a spontaneous departure from rehearsed decisions contributes to the risk taken in a sophisticated performance).

⁷ *Ibid.*

⁸ Philip Alperson, 'Creativity in Art', in: *The Oxford Handbook of Aesthetics* (Oxford: Oxford University Press, 2003), pp. 245–57.

Locating the action: Sonic tactility as part of musical experience

Discourse on musical experience typically evolves around the recognition of formal characteristics of music (such as shape), and around psychological characteristics of the experience, such as a particular mood, character or affect evoked, aroused or somehow else motivated by the music. Recently though, interest is increasing in a third aspect of the experience. This interest concerns bodily involvement in listening. It started out from observations that music may trigger bodily responses. Some of these responses the listener may not even be aware of, like unintentional movement; of other responses, such as ‘musical chills’, or what Jerrold Levinson calls ‘frissons’, a listener might be fully aware. The third aspect also refers to covert subvocal participation as discussed in Arnie Cox’s ‘Hearing, Feeling, Grasping Gestures’.⁹ This kind of work is beginning to unravel the notion of musical tension, a concept that is both metaphorical, in that it refers to tensions as inherent in the musical structure, and literal, in that it refers to (what Leonard Meyer in his *Emotion and Meaning in Music* called) ‘bodily responses’ to sounds and sound processes. As such, the proposition itself – that bodily experience plays a central role in musical experience – is not new: it was already put forward and given substantial thought in Friedrich von Hausegger’s *Die Musik als Ausdruck*, dating from 1885 (100–114, new edition 2010).¹⁰

One notices one’s own body as having an experience in various distinctive ways: obviously, when touching things, or being touched, this experience stands out against one’s fairly attenuated awareness of general bodily presence, unless one is numb. If I touch this surface here, I have quite an acute tactile perception of it. From rough impact with one’s body, to a caress, there is a fascinatingly nuanced continuum of tactile experience that, in comparison to visual or even auditory perceptions gets sparse scholarly attention (Alva Noë, increasing phenomenological work in cultural studies / body as topic / anthropology of the body). Yet there are other types of experience that are also of the body, but are not the immediate results of someone else’s or one’s own physical actions. One can vividly *imagine* a bodily experience.

⁹ Arnie Cox, ‘Hearing, Feeling, Grasping Gestures’, in: Anthony Gritten and Elaine King (eds.), *Music and Gesture* (Aldershot: Ashgate, 2006), pp. 45–60.

¹⁰ See also Fred Maus on Hanslick’s animism. [Further example of reflections on the body in music: Roland Barthes, *The Responsibility of Forms*, transl. 1985 (1982) ‘Music’s Body’ – ‘The Grain of the Voice’, 276–7; ‘*Rasch*’, 300ff. talks about Schumannian body].

Plus, there is the experience of *sheer* bodily presence. With this I do not mean an interoception as it might occur in the case of stomach pain or exteroception in the case of an itch. I mean the simple awareness of having a body at all, and of where it extends to. Together with Oliver Sacks and Merleau-Ponty I call such bodily awareness proprioception (although this term in some definitions can just refer to the sense of balance or kinaesthesia). [Andy Hamilton¹¹ argues that proprioception isn't a perception at all, but direct bodily knowledge; but this belongs to a different discussion.] Such imaginations or proprioceptions share with subvocalisations, chills, and other bodily experiences affected by music that they originate without direct tactile stimulation. One doesn't quite know where they come from, except that they arise within the musical experience; in this, they might be viewed as being 'as if' experiences. Differently put, one might say that it is 'as if' we were touched, in some mysterious way, by music, not only in terms of emotion, but also quite literally, in proprioceptive terms. Theories or observations concerning the bodily effect of musical experience share their consideration of its *felt* dimension.¹²

Active perception in space as a virtual instrument

An essential component of this felt dimension of musical experience, though being an intangible first person experience, was exposed quite strikingly during a recently concluded research project. I shall presently dwell on technical details only briefly, to be able to offer a fuller discussion of the consequences of the findings.

Imagine a dancer moving through a sort of sonic hologram, with the body's motion trajectories traversing through timbral material, as if sliding through a space in which each spot makes a sound – without there being a surface to slide on. Imagine what Rován and Hayward call an “open air controller”,¹³ a motion tracking interface based instrument, in which spatial positions of tracked parts of the body are mapped onto

¹¹ Andy Hamilton, 'Proprioception as Basic Knowledge of the Body', in: Woudenberg and Roeser (eds.), *Basic Belief and Basic Knowledge: Papers in Epistemology* (Frankfurt: Ontos, 2005), pp. 269–

¹² Comment on John Rink's reading of Cox.

¹³ Rován and Hayward, 'Typology of Tactile Sounds and their Synthesis in Gesture-Driven Computer Music Performance', in *M. Wanderley and M. Battier (eds.), Trends in Gestural Control of Music*. Paris: Editions IRCAM (2000), esp. p. 2.

sound materials, so that effectively one plays with space as a virtual musical instrument. The sum of the spatial distribution of sonic responses gives what I just invoked as a sonic hologram and what in the project we referred to as a ‘sonic scenario’.¹⁴ At project start, this setting was thought to become the site of experimentation with mappings between motion qualities and sound qualities, not only to develop an expressive interface to be played using the whole body, but also, more fundamentally, to help understand what qualities of mappings would support or hinder expressive performance, and thus to approach, in an ‘analysis by synthesis’ manner the relation between musical expression and bodily expression. Astonishingly, the hologram, despite its invisibility, is tangible. There is nothing there apart from the sonic response; yet, with few exceptions, people who played the instrument could ‘touch the sound’. [for example: Sphere was fluffy]

One can analyse this tactility from the perspectives of phenomenology, philosophical aesthetics and philosophy of mind, but it evades easy categorisation as illusion, hallucination or imagination. In my own analysis I concluded that the tactility results from a cross-modal haptic completion to which I shall say more shortly.¹⁵ The phenomenon might however still attract quantitative empirical investigation. But bearing further on the present line of argument, the haptic resistance performers felt within a fixed environmental sonic topology is not the only appearance of this tactility. Even without the spatial volumes and already within the context of *linear* bodily gestures, the tactility would be part of overall shapes engendered by the sonic development. Shapes which, in other words, were felt proprioceptively. These felt shapes were present enough for dancers to orient their movements on or even to give rise to movement. In places of empathic correlation of sonically suggested movement qualities with their actual movement, dancers would feel that they ‘embodied the sound’, meaning that they would feel as if sonic and movement qualities *merged*. And beyond the qualities, the intentionalities of the two movements (one suggested by the

¹⁴ The ‘Embodied Generative Music’ project, funded by the Austrian Science Fund, ran from 2007–2010 at the Institute of Electronic Music and Acoustics IEM, University of Music and Performing Arts Graz. Project website: egm.kug.ac.at (accessed 22.9.2011).

¹⁵ See Deniz Peters, ‘Haptic Illusions and Imagined Agency: Felt Resistances in Sonic Experience’, *Contemporary Music Review* (forthcoming; preprint available online).

music, the other continuing the dancer's) merged as well.¹⁶ The state of maintaining such embodiment was intriguing to the dancers, who explored it for hours on end, discovering innumerable passages that had this synaesthetic quality.

Crucially for the present context, the movements were not ones that sprung from the dancers' habitual repertoire which, in view of their being expert improvisers, is considerably vast. Nor were they imitations of instrumental sound-producing gestures such as for example those encountered in air-guitar playing world championships. Instead, they felt they were correlating their movements spontaneously with those invited or incited by the sound, leaving habitual ground this way, breaking their habits with a degree of innovation that surprised the dancers themselves. There was an acute impression of aptness or, on the other hand, deviation, with the said state of embodied experience being noticed by the dancers on a phenomenal level, that is, aesthetically, rather than intellectually. The feeling of shape arising from the sound they approached was just there – in the sound, into which they extended, and which thus became part of their bodies. Extraordinary as this feeling may be, it is not a totally unknown occurrence. For example, Wilson-Bokowiec and Bokowiec, in their 'Kinaesonics: The Intertwining Relationship of Body and Sound', describe a related experience they had when working with their *Bodycoder* system, an instrument that uses bend sensors worn on the body, resulting in a "feeling of the texture of a sound in the arm".¹⁷

And that is a manifestation of what I think is *also* present when *merely* listening. Poignantly put, when we hear *Gestalt*, shapes, phrases, gestures in music, we don't just hear them but also feel them in it. An inkling of this appears in essays such as Andrew Mead's 'Bodily Hearing'¹⁸ and Stacey Sewell's 'Listening Inside Out'. Sewell recounts her bodily reactions from a purely listening point of view to *Crackers* by Christof Migone and *Ground Techniques* by Neil Luck, calling "the instrumental imitations [of breathing sounds in *Ground Techniques*] [...] highly visceral".¹⁹

¹⁶ For a more elaborate discussion of this intermedial experience and the merging of intentionalities see Deniz Peters, 'Enactment in Listening: Intermedial Dance in EGM Sonic Scenarios and the Listening Body', *Performance Research* 15:3 (2010), pp. 81–7.

¹⁷ Julie Wilson-Bokowiec and Mark Alexander Bokowiec, 'Kinaesonics: The Intertwining Relationship of Body and Sound', in: *Contemporary Music Review* 25:1/2 (February/April 2006), pp. 47–57, 54.

¹⁸ Andrew Mead, 'Bodily Hearing: Physiological Metaphors and Musical Understanding', *Journal of Music Theory*, 43/1 (Spring 1999), pp. 1–19.

¹⁹ Stacey Sewell, 'Listening Inside Out: Notes on Embodied Analysis', *Performance Research* 15/3 (2010), pp. 60–5.

Further, Arnie Cox, in what he calls ‘mimetic hypothesis’, concurs in claiming that “‘melodic sighs’ and ‘musical gestures’ *feel* like gestures and sighs”. Theorising these phenomena, Cox says that “according to the mimetic hypothesis, we experience patterns of exertion by way of mimetic participation, and in this way it is as if we are acting – acting in a way that is more or less isomorphic with the sound-producing actions heard (and seen)”.²⁰ Recall Cross’s characterisation of action in listening as a sort of being on the verge of singing. Like many other authors, Cox therefore conceives covert action as closely *imitative* to the *performer’s* actions, heard and seen. But isomorphism is a strong term, and I think there is reason to doubt the ability of non-musicians to imitate performing actions to a significant level of adequacy and intimacy; in contrast, I would argue that this very *inability* does not seem to be much in the way of bodily participation. Further weakening the isomorphic stance is that instrumental actions are often mediated by the mechanics of an instrument, and this mediation strongly influences and co-defines, say, a pianist’s gestures. Plus, I think that in the context of a supposed isomorphism and the notion of imitation, the metaphor of mirroring is misleading: it affords skill to imitate something skilled beyond the level of caricature.²¹ So it is not a perfect mirror. It’s dirty, blind, contorted and fractured, and one might even doubt whether it is a mirror at all.

I claim that sound-producing actions coming into play in bodily experience are neither primarily those of the instrumental performers, nor imitations thereof, but reminiscent of sound-producing actions belonging to a realm without instruments, a realm where the body itself is producing the sound. It is *this* realm we are intimately familiar with, as by being in the world we make sounds ourselves on countless occasions each single day. We know, first hand, what it feels like to be making sounds, even if their timbres aren’t those of instrumental traditions, and even if we rarely pay much conscious attention to the fact that we make these sounds. We know how timbres vary, depending on the force, speed and other aspects of the contact we make with the world and other beings, and this is sensorimotor-knowledge. It is *this* knowledge that I find reflected in the dancer’s ability to enact sonic gestures in the said sonic scenarios – recalling they do not enact any instrumentalist’s gestures whatsoever.

²⁰ Cox, ‘Hearing, Feeling, Grasping’, 53.

²¹ Anyone here who tried imitating Tai Chi movements?

It would be to misconceive the felt shapes to think them clear in outline.²² One could think of the process more like one of perceptive completion going on when seeing a broken object, or a writing with fragmented letters; or, to cover the additional mode of perception, one could compare it to the internal voice of a text one is reading, springing forth from a vivid memory of having witnessed the author's reading voice. The feeling of the sound is something added actively via perception. It is added from sensorimotor knowledge, and I call it perceptive completion because it adds percepts in the tactile modality that would be expected from prior synaesthetic experience, as sound made by us is known only in sync with the feeling of making it. These completed tactile percepts are almost always on the lower border of perception, often evanescent and scarcely articulate in their quality, tending to withdraw from ready and clear analysis; however, sometimes they are quite pronounced, as anyone would confirm who has felt hit by the impact of fate in a movie only to realise that the hit was part of the soundtrack.

Having stressed the vagaries of the felt shapes so far in order to avoid an oversimplification of the relation in which they stand to sound-producing actions or musical figures, this might now prompt the questions: What are these felt shapes? Is there any way to characterise, qualify, distinguish, or compare their features? What supports my conceiving them as shapes at all, rather than, say, arbitrary visceral irritations? The closest answer I can give to this is at the moment goes back to the experiences in space as a virtual instrument. There, the tactility unfolds in highly nuanced, varied and articulated movement qualities. It is akin to a structured resistance, perhaps like the resistance felt in drawing with charcoal, and one that appears in aesthetic appreciation of the drawer's *ductus*, that is, the textures of the individual lines. In listening alone, the felt shapes often only stand out as peak events of the chill or fissure kind. It is definitely a task for a future phenomenology of music to elaborate on such tactility, complementary to what has been done in film theory, in

²² There isn't an isomorphism between these felt shapes and performers' actions, just as there isn't a symbolism of musical figures quite as rigid as proposed by Deryck Cooke in his *The Language of Music*.

the studies of tactility in the cinematic experience by, for example, Laura Marks and Jennifer Barker.²³

Enactment, performativity and cultural mediation

In the remainder of this talk I shall consider the role of sonic tactility as emerging from the lived body in constituting, at least in part, one: an event of creativity, and two: a performative event. I start with the latter, as it concerns the listener, and move over to the former, concentrating on the performer in her being a listener as well.

When hearing a passage of music, we might of course recognise something we have heard before in it, which is the basis for musical symbolism, allusion and musical intertextuality. But that is only one aspect of the listening experience, one that does not involve the body in an immediate way. What does involve the body is the felt shape of that passage. When this felt shape, no matter its rhythmical or timbral articulation, is taken up by bodily imagination, it already *concerns* the listener's body, as it is from it.²⁴ Listening, then, turns into an intimate encounter, staged within the lived body.²⁵ More urgently and touchingly than via connotative association – and with a fuller sense of detailed musical appreciation –, an encounter with music may thus become a *gendered* encounter for example. In enacting that which we find suggested in the music, we thus not only covertly perform it in a kind of automatic fashion, but, as long as the experience lasts, we *live* it – taking it as the intentional object of an emotion. That, I think, is the deep, nonmetaphorical basis of how music

²³ Laura U. Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham, NC: Duke University Press, 2000); Barker, Jennifer, *The Tactile Eye: Touch and the Cinematic Experience* (Berkeley, CA: University of California Press, 2009). For a start on elucidating tactility in musical experience, see Deniz Peters, 'Touch: Real, Apparent, and Absent: On Bodily Expression in Electronic Music', in: Deniz Peters, Gerhard Eckel, and Andreas Dorschel (eds.), *Bodily Expression in Electronic Music: Perspectives on Reclaiming Performativity* (New York and Abingdon: Routledge, forthcoming).

²⁴ As Jennifer Barker puts it in the context of cinematic experience in her *The Tactile Eye* (2009), p. 85: "during the film experience, the spectator's body lives in two places at once, because she directs herself through her body toward her own space and the film's space at the same time".

²⁵ Regarding the listener's vocal investment, David Burrows evokes the image of a dramatic encounter between individual will and the world, staged within the vocal apparatus. David Burrows, *Sound, Speech, and Music* (Amherst: University of Massachusetts Press, 1990).

can touch us. It is not only a biological, nor an isolated encounter, but entrenched with culture through embodied acculturation: a *performative* encounter.²⁶

And here creativity enters performance. While overtly performance is a matter of playing with shaping sound, covertly it is a matter of playing with sounding shapes as felt. A similar strand of bodily experience that engages the listener, engages the performer, only that the performer decides about the continuation of a sounding shape. In other words, the performer approaches in her or his interpretation of a score, or in her or his improvisation, not only the heard attribute of a passage, but also the felt. And as the felt attribute is by far more volatile and less clearly shapeable as the sounding itself, it is here also where performance decisions turn creative, laying the groundwork to turning – to use Keith Sawyer's²⁷ terms – from “little c” creativity to “large c” creativity upon their reception.²⁸ Decisions of this kind are made and often consolidated already at the rehearsal stage, which involves experimentation beyond the question of how a passage is approached technically, into that of its felt shape. The sum of such decisions and the consistency and synthesis formed therein, make a decisive difference on interpretation. It is with the body that such shapes are *found*, and, consequently, decisions taken. I contend that the clearer they are worked out in an interpretation, the more pronounced and personal will be its performative capacity and agency – heightening the potential for a transformative event as described by Georgina Born. This brings me to my final point on letting the body decide.

Letting the (lived) body decide: between suppression and abandon

Subtle as these felt shapes are, they may be worked with, or ignored. Attention to such shaping involves an element of volition. One can detach oneself from the bodily aspects of listening, in what I have elsewhere called the abstractive mode of

²⁶ Cf. Marks, *The Skin of the Film*, 145 (chapter on ‘The Memory of Touch’), in talking about finding “culture *within* the body”: “even illegible images are (cultural) perceptions, not raw sensations.”] See also: Carrie Noland, *Agency and Embodiment* (2009), (chapter on ‘The Gestural Performative’), pp. 196 and 59; Hastrup, ‘Performing the World: Agency, Anticipation and Creativity’, 200.

²⁷ Keith Sawyer, *Explaining Creativity: The Science of Human Innovation* (Oxford: Oxford University Press, 2006).

²⁸ [performers have an intuition as to their success and as to their connectedness with an audience]

listening.²⁹ The empathic mode of listening, on the other hand, is one that lives through the possible performativity based, as I argued, in the lived body. And by following through with such empathic listening, at rehearsal stages, or in concert, one does not bracket the sway of affect bodily experience may engender. To follow through in this sense, then, is to give the lived body the lead in shaping the sound. The suppression or dedication to letting the body decide plays into a myriad of issues of style, technique, health, discipline, audience expectation, and so forth. Which option to follow, is, ultimately, a matter of aesthetic choice. This choice, as I hope to have shown, affects the core of musical experience. The intentionality that emerges from the lived body in working with felt shapes of sonic motions, then, stands midway between cognitive engagement in the listening experience and what is culturally mediated in it. Understood this way, it can be seen as a vital creative resource.

²⁹ Peters, 'Touch: Real, Apparent, and Absent', see note 23. Cf. Jerrold Levinson's closely related account of two listening modes in his 'Musical Chills', p. 221.