MUSIC IN BODY AND IMAGINATION

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ABSTRACT: Music is widely thought to have therapeutic possibilities. The predominant attempts to understand music-as-therapy—chiefly within neuroscience, but among many music-therapy practitioners as well—focus on "how it works" rather than on why it could work. This readily leads to reductionist accounts that appear to leave out what makes musical experience musical. We need an understanding of musical experience—and of the metaphysics of music—that takes seriously the imagination and the will, as well as the body. One way to approach this is through considering another side of musical experience—its sometimes intrusive, disruptive appearances (including musical hallucinosis), and the connection that these reveal between imagined sound, the sensations of bodily movement, restlessness, and anxiety. This can lead us on to an alternative, more "existential," view of music-as-therapy whereby musical experience, operating through the imagination, recalls our sense of our "pre-morbid states" —how we felt before we were ill—offering us both consolation and reassurance. The account may have relevance to a wider understanding of musical experience beyond the therapeutic context.

KEYWORDS: Music; body; imagination; music-as-therapy; musical experience; metaphysics of music; will; movement; restlessness; anxiety

SIMPLISTIC APPROACHES TO MUSIC, THERAPY, AND THE BODY

There can be few more compelling invitations to consider the relation between music and the body than Oliver Sacks's account of the musical epiphany that catalysed his convalescence from a crippling injury to his leg; the familiar passage pivots thus:

> And suddenly—into the silence, the silent twittering of motionless frozen images—came music, glorious music, Mendelssohn, *fortissimo*! Life, intoxicating movement! (Sacks 1984, 108)

This joyous declamation has, I daresay, been an inspirational starting-point for many who have thought about therapeutic engagements with music, standing in vibrant contrast to the utilitarian conception apparently underlying such titles as "The effect of music on the neurohormonal stress response to surgery under general anesthesia" (Migneault et al. 2004). If we are inspired by Sacks (and I am), we probably regard the following as blindingly obvious:

> The word *music* stands for a multiplicity of human events that are difficult to analyse from a reductionist point of view. (Hilleke et al. 2005, 275)

So obvious, in fact, as to go without saying—at best, a corrective that might be needed by others. It might be kept in reserve to be deployed against statements like this:

> [O]ne of the great powers of music is to evoke hippocampal activity related to happiness. (Koelsch 2009, 378)

Koelsch and Sacks need not of course be in actual disagreement, since they are scarcely talking about the same thing at all. Koelsch is telling us something about what the experience of listening to music *does*: what it may involve in the brain. By contrast Sacks is, I think, telling us something about what music *is* and *means*. Interestingly, both writers seem to attribute to music a kind of ontological independence of the listener: music *comes into* the silence; music is the possessor of *great powers*. Both seem to imply a kind of agency, inviting us to enquire into music's therapeutic potential.

How is that potential made manifest? For Koelsch, music stimulates felicific brain processes—simple enough, and as a story about beneficial effects it clearly could be regarded as reductionist, albeit perhaps defensibly so. Things are different for Sacks (for all that he was himself a neurologist): music and our engagement with it are first and foremost existential matters, to be understood at the level of life-affirming (and life-changing) events. To appreciate his view properly one must of course read the relevant parts of his work in full; I want here only to draw pertinent contrasts. One can think of "the therapeutic" in experiential, existential terms concerning thought, feeling, action and purpose; and one can think of "the therapeutic" in material terms concerning tissues, cells, neurons, physiological and neurological functioning. Broadly speaking, within the literatures exploring "music therapy," "musical therapy" and "music-as-therapy" one will encounter both approaches, characteristically taken by practitioners and neuroscientists respectively.

And here lies a great temptation. One might like to imagine that only the scientific literature is to be charged with a reductionist point of view, something from which the practitioners of the art of music-as-therapy and its variants remain free. But reductionism—the idea that a sophisticated and complex whole "really" boils down to

some key feature or features that account for all the rest—can put in appearances in unexpected places; and even in the expected places it may not always be what it seems.

To begin with the latter, we may feel unsurprised to find neuroscientists enthusing about the role of central limbic structures in the musical "induction" of pleasurable experiences such as shivers down the spine (Koelsch 2009, 376), or neural activations that musical experience shares with "sexual activity, ingestion of chocolates, or consumption of drugs" (Koelsch 2009, 378–9). Perhaps more challenging is the conjectured antimicrobial benefit of music via its inducing "the peripheral production and release of nitric oxide" (Boso et al. 2006, 189). Moreover anyone might wonder quite what to make of the alleged "Mozart effect" on epilepsy: the proffered explanation—increased coherence in the lower alpha bands of an EEG trace—seems like a comforting distraction from the troubling phenomenon it is meant to explain, namely that epilepsy sufferers apparently do better listening to Mozart than they do when listening to Haydn or Brahms (Boso et al. 2009, 189-190).

It is too easy to assume that such studies are based on reductionist assumptions about music itself: they need not be. Koelsch cites modulation, reanimation, evocation, and activation among the modes of impact that listening to music can have upon key structures and functions within the brain (Koelsch 2009, 378-380). Thaut emphasises music as "a mediating stimulus … arousing, guiding, organising, focusing and modulating perception, attention and behaviour in the affective, cognitive and sensorimotor domains" (Thaut 2005, 304). Such claims are concerned with music's therapeutic *effects*—effects that, while doubtless telling us something about what music is capable of, appear confined to the listener considered merely as an organism regulated by neurophysiology in apparent isolation from cultural influences on

musical memory and imagination – in short, unburdened by any explanatory claims concerning music's nature *qua* music.

But perhaps that is the problem. Perhaps studies of experiences of music—including therapeutic experiences of music—*ought* to be grounded upon, imbued with, a deep understanding of music such that the explanations are themselves contingent upon music's nature, properly comprehensible only if we also understand something of what music is and does. Perhaps the satisfactory articulation of music's therapeutic power ought to be expressible only in terms that are themselves at least part-musical: "Mendelssohn, *fortissimo*!"

So we come to the other half of the temptation, above—to assume that practitioners of music-as-therapy are free of reductionism because they attend to the phenomena at the level of the experiential, the existential. Prominent here are Paul Nordoff and Clive Robbins whose trademark "creative music therapy" with children emphasises collaborative improvisation as a *modus operandi* that is "only partially communicable in words" and whose transactions are musical events that can be "apprehended" only through listening to recordings of them (Nordoff and Robbins 2007, xxiii). Bunt (1994) and Ansdell (1995) usefully survey varieties of music-based therapeutic practices as preludes to expounding their own approaches; Ansdell confirms the importance of creative improvisation in giving expression to that which patients cannot otherwise express, or connections that could not otherwise be made. Confronting one form of scientific reductionism head-on, Ansdell identifies musical dialogue between patient and therapist as a "freely willed, intentional force," evidence of "the very inner, unconditional and dynamic forces that behaviourism would like to exclude from its picture of human functioning" (Ansdell 1995, 32–3).

Lurking even here, though, is the risk that there be some presumed "nub" of the therapeutic encounter to which the whole may be essentially reduced. To his credit, Ansdell defies the usual temptation that afflicts musicians and non-musicians, scientists and non-scientists, practitioners and non-practitioners alike—to suppose that music is essentially a language of the emotions, and that its therapeutic powers are essentially those of emotional release or catharsis (Ansdell 1995, 9–10). A simplistic emotivism afflicts the neuroscientific studies referred to above if anything more than it does the therapeutic practitioners (Boso et al. 2006, 188; Koelsch 2009, 380; but see also among practitioners Hilleke et al. 2005, 278). The idea that emotion is the basis of our understanding music is intensified, though certainly not rescued, by an emphasis on *affect* as the pre-reflective, visceral bodily experience of emotion or feeling, prior to and independent of meaning or understanding. Such a view takes seriously the embodied nature of musical experience, but at the expense of dismissing the cognitive and imaginative interpretive structures of listening, within which alone can musical sounds be understood and enjoyed with mind or body (Evans, 1990). The affective of course underlies all visceral enjoyment – but fails to account for the fact that we have to grasp what we're listening to in order to enjoy it at all! For a comprehensive demolition of the wider 'turn to affect' and its implications, see Leys (2011). But what alternative "unconditional and dynamic forces" has Ansdell in mind? He speaks of "grounding" and "alleviating" (literally, lightening) the patient (Ansdell 1995, 34 & note), and also of "entrain[ing]" (Ansdell 1995, 9–10) The problem is—and I too shall be thought guilty of it—is that without some credible theoretical grounding such notions (perhaps still more so as "forces") will appear to be indefensibly foundational, and evidence of unconscious reductionism. Hilleke et al put the point trenchantly:

> An extensive corpus of modalities and treatment theories exist in the music therapy world. Some of them are psychoanalytic music therapy, humanistic music therapy, behavioural music therapy, Nordoff-Robbins music therapy, and music medicine. Often music therapists refer to one of them as the theoretical background; nevertheless these traditional approaches can be considered as more or less belief systems. (Hilleke et al. 2005, 276)

In summary, the position appears to be this. The heavily-materialist approaches taken in much neuroscientific investigation of music-as-therapy may nonetheless avoid an objectionable reductionism if what they seek to explain is music's effects, rather than its nature. At the same time, the experiential or existential approaches taken by practitioners of music-as-therapy may rest on undeclared or undefended foundationalist notions that make them vulnerable to charges of an alternative form of reductionism.

Significantly, both neuroscientific and practice-led enquiries into music-as-therapy emphasise its practical applications and, thereby, music's own attributed *effects*—but with surprisingly little distinction between these effects and music as such. Hilleke et al. do recognise the distinction, but only to lament that amid the "therapeutic eclecticism" found among practitioners "[a] music-specific therapeutic paradigm does not exist" (Hilleke et al. 2005, 276).

Very well: but equally puzzling is an apparent neglect, in the neuroscientific summaries, of the role of imagination in musical experience. I will elaborate on this below, but suffice it here to say that I take imagination to be simply the playful ability of the mind to present *ideas* to itself – the ideas with which we are most concerned

being musical ideas, of course. A contrast dominated instead by *affect* apparently presumes a somewhat vulgar emotivism that itself reflects a post-Romantic fixation with emotion for which musicians themselves are largely to blame. That is, a conception of music is presumed but only tacitly appealed to, and it is a simplistic and inadequate one at that. More interesting conceptions may be presumed elsewhere (by Thaut, for instance) but are not articulated. It seems hard to find an understanding of music-as-therapy that is grounded in an articulation of music *qua* music.

To understand *why*—as distinct from mechanically *how*—music can be experienced therapeutically, we seem to need an alternative conception of musical experience and its relation to ordinary embodiment. We also need to be sceptical about music's being "put to work" detached from its being experienced intrinsically as music. After all, we may not always be masters of music's power and agency, and we cannot lightly assume their benevolence: musical experience may on occasion be anything but therapeutic. In particular, as I shall explore below, music unbidden may be music unwelcome.

AN ALTERNATIVE CONCEPTION OF MUSICAL EXPERIENCE AND ORDINARY EMBODIMENT

We can start to sketch out such an alternative conception only if we first abandon the fixation with music's being the expression primarily of emotions (Blood et al 1999; Boso et al 2006; Koelsch 2009; Trainor and Schmidt 2003)—realised through a correspondingly limited subset of neurological functions more or less confined to the limbic system—in favour of a more inclusive understanding of music *in expressive relation to our bodies and our bodily self-experience*. Such a relation would embrace

bodily rhythms and movements more generally, our inner awareness of ourselves and our movements (in proprioception and kinaesthesia), our sense of willed action, and the role of an active imagination.

The first aspect—music's expressive relation to bodily movements and rhythms more generally—seems self-evident. Any music that we are capable of hearing and making must inevitably exhibit certain facts about our own embodiment and about the material world around us (Evans 2010). It speaks to the musculo-sensory backdrop of all experience, cashed out as those dynamic tensions and resolutions, repetitions, tonal resonances and rhythms that are natural to us—the very material and matter of music's organised playfulness. This is as recognisable to a neuroscientist (consider Thaut's contention that "rhythmic sounds also entrain the timing of muscle activity'"[Thaut 2005, 304] as to a therapeutic practitioner (such as Ansdell who argues that "Within the body our different physiological rhythms are 'musically' entrained" [Ansdell 1995, 9–10]).

The second aspect—music's relation to our inner self-awareness—underlay Sacks's brief, but glorious, Mendelssohnian epiphany: his lost kinaesthesia was temporarily regained. Aside from such dramatic realisations, our inner self-awareness is perhaps less obvious a dimension of musical experience; yet nonetheless it is there, and if the urge to tap one's toes is something that one can resist in terms of 'acting out' one certainly cannot resist feeling it.

However this suggests to me a deeper connection between music and our sense of *self*. Damasio suggests that our inner "primordial feelings"—the "direct experience of one's own living body, wordless, unadorned and connected to nothing but sheer existence"(Damasio 2010, 21) —arise from the core of the self, its earliest foundations. (His reasons include their constancy over a lifetime, offering a surer

grounding for personal identity—the "simultaneous foundation of mind and self" (Damasio 2010, 256) —than do our world-facing senses, for instance.) Damasio evidently feels the pull of a connection between self-experience and music. He compares the ineluctable feelings that are part of any subjective process to

> …music, as a score that accompanies the *remainder* of the ongoing mental process, but noting that the performance is *within* the mental process too. When the main object in my consciousness is not the [Pacific] ocean but an actual music piece, then there are two musical tracks going in my mind, one with the Bach piece that is playing right now and another with the *music-like* track with which I react to the actual music in the language of emotion and feeling … call it music on music. Perhaps polyphonic music was inspired by an intuition of this accumulation of parallel "musical" lines in one's mind. (Damasio 2010, 254)

As will be seen below when I turn to the idea of unwanted and intrusive musical experience, the ineluctable nature of these aspects of self-experience—particularly in kinaesthetic terms—is confirmed by understanding how musical experience can be as wearisome when it is unbidden as it can be revitalising when bidden.

The third aspect of inner experience to which music has, I believe, a specially-intimate relation is the experience of *willed action*. Now we can communicate those aspects of experience that can be conceptualised, put into words, but there is an irreducible remainder that cannot be put into words—the sheer "what it's like" to be experiencing, and to be an experiencing subject. The subjective reality of all experience has the ineffable at its core—the un-nameable "what it's like" —whether

this concern the taste of chocolate, the darkness at the centre of grief, the indecision prior to action, the sound of Bach's blazing majesty, or "the velvet diapason of the Wagnerian orchestra" (Gould 1966, 50).

Along with the inner sense of continuous identity and location (we are after all the spatial reference point for all our physical observations), we know directly, within ourselves, moods, memories, emotions, intentions and—signally—*acts of will*. Among philosophers, Schopenhauer has most provocatively articulated the importance of our direct knowledge of our willed action (Schopenhauer 1966). We need not here follow him into the detail of his metaphysics, but it is striking that he thought that our immediate knowledge of our own willed actions—known by others through observable behaviour, but by ourselves directly—gives us a crucial source of insight into our own nature that is otherwise largely hidden.

More strikingly still, he thought music—alone among the arts—offers us a glimpse of that hidden reality that underlies both our selves and our world. In his own words, music expresses "with the greatest distinction and truth, the inner being, the in-itself, of the world" (Schopenhauer 1966, 264). "Accordingly we could just as well call the world embodied music as embodied will" (Schopenhauer 1966, 262). In listening to music, we are directly glimpsing that underlying reality—or coming as close to it as we ever do, with this one exception: our direct immediate knowledge of our own willed actions, as those acts of will emerge "from the inaccessible depths of our unconscious selves." As Bryan Magee puts it, "It can therefore be said that it is from these inscrutable regions that music speaks. In this sense what it articulates is insight into, and in *that* sense knowledge of, the hidden, inner nature of our own willing…" (Magee 1983, 184)

This view—controversial in its wider metaphysics, but they are not needed here—importantly extends music's expression of our inner sense of embodiment beyond the passive (sensations, emotions) to the active and volitional. One fourth and final aspect remains, carrying the volitional forward into the playful (as music must at some level be): the embodied imagination.

The fairly general (and perhaps Humean) notion of imagination that I earlier proposed is, I think, more helpful than more specific accounts. For instance Warnock's view, that imagination supports our 'thoughts about what is absent' (1976, p.196) will fail for musical imagination; for unless we stipulate that music exists only in actual sound then its presence or absence in thought-as-such is moot: I see no reason to deny that a musical thought is any less *musical* than is that same thought realised in sound. In a related manner, Scruton's account (1974) of imagination as 'unasserted' thought, the construction of a kind of narrative that goes beyond what is given or believed and that underpins a form of playful speculation, is one that works well for representational arts – where the distinction between an original and its imaginary recreation or representation holds – but falls short in the case of music where nothing is represented beyond the musical idea.

Imagination's role in composing music is obvious enough; but all musical experience including performing *and listening* involves active, musically-thoughtful anticipation and, thus, imagination. (Evans 1990) Musical thought is essentially playful and essentially imaginative: its manifestation in actual sound is at one level no more real – merely more public. In this sense, music *is* a form of imagination, whose activities are from time to time typically but not invariably shared in sound. I do not even think that sound need constitute the majority of acts of musical imagination. As Sacks observes, alien visitors would be 'stupefied when they realized that, even in the

absence of external sources, most of us are incessantly playing music in our heads. (2007, p.40) The musical imagination is to this extent music's primary domain.

Since our inner self-experience in proprioception, the kinaesthesia of movement and willed actions are (as I'm proposing) inbound to the bodily experience of music it follows that they are inbound to the imagination that is at play in listening to, performing or composing music—and correspondingly that, in music, the imagination is intimately connected, inbound, *to them*. To imagine music is to imagine musical experience: and to imagine musical experience is inevitably also to imagine the inner self-experience, the kinaesthesia, the willed action, that is fused with it (including, in Damasio's terms, the primordial feelings that run beneath and within the musical experience, the accompanying "music-like track" [Damasio 2010, 254]). Where music reaches, so must the imagination. And *perhaps*, where the imagination can reach, so might music.

So now we have sketched out that alternative conception of musical experience that might allow us to consider why it is that music-as-therapy can be effective. The healing potential of music is made possible as much by the intensity of musical experience operating through the imagination and its inward reach into our inner self-experience—by *recalling, re-imagining and in a sense revitalising the former sense of* our pre-morbid inner states—quite as much as it is by any more mechanistic attempt to reinstate them (through, for instance, neuro-muscular "entrainment").

Here I suspect we are drafting the terms of reference for the instincts expressed by some advocates of "creative music therapy" —curiously redolent of Schopenhauer's partnering of music and willed action as offering glimpses into our true, but hidden, nature. As Ansdell puts it:

> These [therapeutic musical practices] are possible because they engage aspects of our nature that are themselves in some sense musical manifestations… "Music" says Thomas Clifton "is what I am when I experience it" … David Aldridge suggests that we should begin to think of ourselves as 'symphonic' beings rather than the mechanical ones that reductionist scientific medicine would often have us be." (Ansdell 1995, 8)

What is it to be such a "symphonic" being—what is it *like* to be one? The ubiquitous nature of musical engagement (Evans 2010) suggests that at one level we all know the answer in tacit, experiential, terms.

The remainder of this chapter concerns my own experiences of unbidden music, by no means all joyful or [see below] beneficent/*benevolent*. The unbidden music aligns well with, and hence offers confirmatory support to, the conception of embodied musical experience that I have sketched out above. The following autobiographical fragments will, I hope, illuminate this.

MUSICAL INTRUSIONS: A SUFFERER'S PERSPECTIVE

If I can hear music of any kind, regardless of whether it is music that I know or music that I don't know, whether it is music that I like or that I dislike, or whether it has any merit or none, then I cannot help listening to it with most or all of my attention. Music grips me by the throat whether I want it to or not, and frequently disrupts my attention to anything else that might otherwise be occupying me.

The type of music involved doesn't make much difference. Even though loud, insistently rhythmic music (which often also has sexually-charged lyrics and vocal delivery such as some soul music or hip-hop etc) is obviously intrusive to a conversation, even very restrained and abstract instrumental music equally grabs my attention in a different way, but to much the same effect of interrupting my ability to do anything else.

This is frequently a problem for me in attempting serious conversation with other people, where it is a real practical difficulty. (My sense of frustration is made worse by a sense of isolation, arising from the fact that I cannot understand why the other people are not finding the background music a problem in the way that I do.) If, instead of conversing, I'm doing something on my own, it's remains a problem but—provided I'm not trying to read and concentrate on my reading—then it is usually annoying rather than disabling.

Perhaps this suggests that I am excessively, morbidly, sensitised to music. I would never choose to have background music on whilst I'm working, and I'm completely unable to understand the wishes—or the experiences—of those who do, although I recognise that they might even be the majority.

Hearing and "Hearing"

Although external musical interruptions are a significant problem for me, their public sources make them seem more obviously like other irritants, such as loud and intrusive conversations nearby; particularly those conducted over a mobile phone (where to the interruption is added the torment of our irresistible urge to conjecture

the un-heard half of the conversation): these are things that I encounter along with everyone else in modern life, and have to deal with.

But what I shall call 'internal' musical intrusion – inner music – is different. This seems to be something that I somehow 'do to myself.' If I want help in dealing with external musical interruptions, I can ask another person such as the waiter or the manager to turn the music volume down, or off altogether. But there is no-one other than myself whom I can ask in the case inner music. And since I myself seem unable to turn the volume down, then it is a significant, sometimes even severe, problem that is unfortunately also very persistent.

Pathological Disruption of Thought and Concentration

It seems not to matter whether or not there is any possible connection or "cross-talk" between the music and the activity on which I'm trying to concentrate. Presumably anyone would find it a problem to hear background music whilst they were trying to think about different music. But I find it a problem even to concentrate on buying groceries in the supermarket if there is background music. This is not so bad as, say, trying to have a meaningful conversation with someone in a restaurant while my attention is being pirated away by background music.

The problem of disruption of concentration by inner music is particularly obvious for me when reading, and constitutes a significant handicap given my professional occupation as an academic. Some form of inner music is going on for a very large part of the time when I am not positively *and successfully* engaged in thinking about something else, something on which I can truly focus. If my attention wanders at all, then there is the inner music waiting to snap up my attention and hang on to it. When

I am reading, the least lapse in concentration on my part will be hi-jacked by the inner music, and then I have to go back over and over the same paragraph or even sentence, trying to regain a sense of what I have missed. This makes reading in particular very laborious, time-consuming, and tiring.

Real and Invented Music

As a neurologist, Sacks is familiar with those people who present as patients, with inner music that is inescapably disruptive, and firmly pathological; he regards such music as morbidly continuous with the more-plausibly standard phenomenon of "ear-worms," with which all are familiar. Moreover he writes generally as though inner music is characteristically "ready-made." For example, he strongly contrasts visual memories and imaginings with musical ones:

> This [fundamentally different way in which the brain treats music and vision' may arise in part because we have to *construct* a visual world for ourselves, and a selective and personal character therefore infuses our visual memories from the start—whereas we are given pieces of music already constructed. A visual or social scene can be constructed or reconstructed in a hundred different ways, but the recall of a musical piece has to be close to the original. We do, of course, listen selectively, with differing interpretations and emotions, but the basic musical characteristics of a piece—its tempo, its rhythm, its melodic contours, even its timbre and pitch—tend to be preserved with remarkable accuracy. (Sacks 2007, 47)

Sacks suggests that "the automatic or compulsive repetition of musical phrases is almost universal—the clearest sign of the overwhelming, and at times helpless, sensitivity of our brains to music"(Sacks 2007, 45). Any relief I might feel on reading this suggestion that everyone shares my affliction is immediately dispelled by the realisation that this cannot in fact be so, since the compulsive and repetitive elements are for me, only half the story: the content of my musical imaginings is not confined to music *remembered*—actual tunes compulsively recalled—but extends also to music apparently *invented* by myself, for obscure purposes but with all-too-clear effect, that of self-torment: the inventions are characteristically banal, hopelessly fragmentary and, worse still, demonically aimless and unfulfilled.

When inner music is inflicting itself upon me, then it is likely to take the form of a repeated sequence of notes and underlying harmonies such as we might often find in baroque music. It might be a debased fragment of some actual passage from (typically) Bach, but that scarcely seems to matter. I seem to cut it out of its context, then cycle and re-cycle it, often endlessly following it through repeatedly unresolved key sequences, a sort of "Bach-nightmare" of a sequence that is perpetually trying to resolve itself but that never arrives at its destination—for, of course, it has no authentic destination. Throughout this, I am perfectly aware that I'm "doing" it myself, but I cannot help it; the awareness in itself may add to the distress.

Sacks does mention patients whose inner music includes inventions: "Gordon B" endures "musical wallpaper, meaningless musical phrases and patterns" (Sacks 2007, 64) and David Oppenheim mentions symptoms that include "new music that I was somehow making up" (Sacks 2007, 75). Overwhelmingly, however, the inner music reported is firmly external in primary origin. For my own part I have so far met only a handful of people who endure invented music of the kind familiar to me, and virtually

no-one who has less capacity than I to dismiss the intrusions of "ear-worms" regardless of their origin, be it in established, external music or in the musical imagination alone.

The Role of the Imagination

> What is more remarkable is [the finding] that listening to music or imagining, even without any overt movement or keeping time, activates motor cortex and subcortical motor systems, too. Thus the *imagination* of music, of rhythm, may be as potent, neurally, as actually listening to it. (Sacks 2007, 240-1; my emphasis; see also for example Halpern and Zatorre 1999; Halpern 2001; Kraemer et al 2005; Hargreaves, Miell and Macdonald 2011)

When I was about twelve, I memorised two entire symphonies of Sibelius, the Third and Seventh, and would "play" them through in my head at night whilst waiting to fall asleep. I would "hear" them (which means of course, *imagine* them) in intricate and satisfying detail including the sound of their wonderfully astringent instrumentation. This was the first time I can remember, or recognise, an ability that I have had ever since, to create imagined musical experience, in detail, of my own choosing. At times I would do this in a more independent way as a part of making up my own music (something that in my earlier years seems to have had none of the futility or unreason that infects the compulsive repetitions described above). This is the ability, I think, that in adult life has come to take on the distorted form of my musical intrusions.

Latterly, when actually asleep, from time to time I dream established music that I know well, and it occasionally happens that I will dream it in the wrong key, realise in my dream that something is not right, and wake up, usually feeling nauseous—pathological music indeed! It may take some minutes for me to work out what has happened, what the music was, and in what way it was "wrong" —such as a passage's being "heard" (imagined) in a key that is for example a perfect fourth away from its true key (for instance, heard in F major instead of C major). If this matters musically—if, for instance, it undoes the key relationships critical to a work's structure—then it seems that it matters personally as well, sufficiently to produce actual physical distress to me upon waking until I can assure myself that it was "only a dream." Formally close to the original, the music has become a parody—the same, yet other.

The Role of Perfect Pitch

Awareness of the parody (and the distress to which it gave rise) stems largely from the phenomenon known as "perfect pitch" or "absolute pitch.'"

At the age of six or seven, I was asked to play a piece that I knew perfectly well on a piano in the home of an elderly relative, a piano I had never seen or touched before. When I tried to begin playing the first couple of notes, I was quite unable to continue; indeed I was wholly disorientated. I stopped, tried again, stopped again and fell into a dismayed silence. The adults in the room were puzzled and asked why I wasn't playing. "I can't play this piano" I replied. "It doesn't work properly." This was not well received, I burst into tears and left the room.

I now know that the reason was that the piano hadn't been tuned for so long that the entire instrument was around a semitone below pitch. Every time I pressed a key, I heard the note that I should have expected from its immediate left-hand neighbour. I couldn't understand this, and was very disorientated and upset (at the time, unaccountably so). Whilst any competent listener will hear the note we call A as being a certain "distance" higher than, say, the note we call F, someone with perfect pitch will hear it intrinsically *as being an A*—or an F, or a B—without reference to musical notation, the sound of other notes nearby, or visual cues from its place on an instrument. Indeed to someone with perfect pitch an F cannot sound like anything else, and it is effectively impossible for such a person to imagine what it might be like to hear it *without* this pitch-attunement. It is difficult to convey to someone without perfect pitch what any of this means without resorting rather optimistically to analogy: for instance, that it might be rather like the impossibility of a native English-speaker's imagining the sound of an English sentence for someone who doesn't speak English.

Even today, it causes me continuing problems; singing in a choir is extremely difficult and actually unpleasant (to the point almost of nausea) if we are singing in a key slightly different from what is written in the score—as sometimes happens intentionally if the conductor wants to bring two consecutive pieces into closer relationship, or (more usually) unintentionally because the choir is unaccompanied and cannot maintain secure pitch over the course of a long piece of music.

The Patterings of The Nervous System

In outlining my experiences of inner music, I have emphasised that its intrusiveness—its disruption of my own volitional processes of thought and concentration—is its most unwanted aspect. Even as I type these words, there is some sort of compulsive, unresolved, fragmentary inner music pattering away in the background, though fortunately at the present moment I notice that it does not entirely get between me and what I am trying to do. (Perhaps right now I even need it, in order to centre my thinking on the phenomenon that I am trying to describe.) But why does it patter away at all?

Sacks considers parallels between involuntary music-hearing and involuntary movements such as the observable tics that characterise choreas and other movement disorders. He broadly rejects the parallels, on the grounds that the content of musical compulsions has roots in experience and not simply in physiology:

> One may use the word "random" with regard to the effects of a low-level mishap in the basal ganglia—in the involuntary movement called chorea, for example. There is no personal element in chorea; it is wholly an automatism—it does not, for the most part, even make its way to consciousness and may be more visible to others than to the patient himself. But "random" is a word one would hesitate to use in regard to *experiences*, whether these are perceptual, imaginary, or hallucinatory. Musical hallucinations draw upon the musical experience and memories of a lifetime, and the importance that particular sorts of music have the individual must surely play a major role. (Sacks 2007, 81)

The prudent layman hesitates to differ from the specialist, but I wonder whether Sacks delimits experiences too tightly: it is hard to think that tics are never present to the

sufferer's experience, and hard also to think that there is no connection (in either or both directions) between the "styles" of tics and the "styles" of the sufferer's learned or intentional behaviours. As for what is or is not "random," I cannot deny that the *repertoire* of my musical imaginings originates in active musical experiences and memories. However, given the existence of that repertoire, I do not see why the content of particular imaginings must always arise from the repertoire in some non-random, that is, directed or symbolic, fashion—why particular imaginings must always be in some sense meaningful, howsoever obscure.

On the other hand the *general*, restless, and often parodic pattering of musical imagination as a whole may well constitute something that is purposive, as I shall shortly conjecture.

The Role Of Kinaesthesia – Its Specificity In My Case

One of Sacks's patients, the composer "John C.,"' experienced something that is very familiar to me:

> [T]hough the music he hallucinated was usual vocal or orchestral in origin, it was instantly and automatically transcribed into piano music, often in a different key. He would find his hands physically "playing" these transcriptions "almost by themselves." He felt that there were two processes involved here: the refluxing of old songs, "musical information from the memory banks," and then an active reprocessing by his composer's (and pianist's) brain. (Sacks 2007, 59)

Invariably, for me, inner music involves a muscular or kinaesthetic component: primarily this component is what the exertions would feel like if I were physically to play the notes that I inwardly hear (which usually involve full harmony, so several notes simultaneously) on the keyboard and, often, the pedal board of an organ, regardless of the actual instrumental timbres involved. Just as for "John C.," there is no need for me to be imagining keyboard music; whatever instrument were involved in the original, then if one were to realise those same notes on the keys and pedals of a pipe organ, my imaginative "hearing" of the notes is inseparable from the sensation of the muscular exertions involved in producing them.

But in my case it is not the hands (or feet) alone. The sensations are also descriptively elusive, but experientially highly specific, forms of what I can only call visceral and "thoracic" kinaesthesia. It is as though given harmonies—given chords, in given dispositions (roots or inversions)—are inwardly realised in more general kinaesthetic or proprioceptive "dispositions" of my body as a whole. The directed "pull" of harmonic movement—the resolutions for which progressions of chords yearn musically—is inwardly experienced as bodily yearnings that are so inbound to my bodily self-experience as to be virtually automatic: certainly they are unopposable and inescapable.

When inner music prevents my falling asleep, as it often does, the intrusion consists both in imagined sound and in wholly actual kinaesthesia. This I think must be true in sleep as well, thus contributing to the discomforts occasioned by my dreaming music in the wrong key, and hence—perhaps—with the "wrong" motoric sensations. Sacks notes motoric experiences in some of his patients but seems to me to pay curiously little attention to them, and he does not explore any one-to-one

specificity in their relation to particular musical sounds, real, imagined, hallucinated or dreamed.

Even so, a clue to their pressing nature may be discerned in what he terms "release" hallucinations as they are manifest in a deaf patient:

> Given her deafness, the auditory part of the brain, deprived of its usual input, had started to generate a spontaneous activity of its own, and this took the form of musical hallucinations, mostly musical memories from her earlier life. The brain *needed to stay incessantly active*, and if it was not getting it usual stimulation, whether auditory or visual, *it would create its own stimulation* in the form of hallucinations. (Sacks 2007, 52; my emphases)

This accords well with the conjecture that I have begun to frame in my own case, as follows.

TOWARDS AN UNDERSTANDING: "EXISTENTIAL REASSURANCE"

It is perhaps not merely the brain that needs to "stay incessantly active" but the embodied self as a whole, in a more general, existential sense: in kinaesthetic and proprioceptive terms, the need for musico-motoric stimulation that confirms that one is *still there*, still oneself. It seems to me then that in my own case this pattering-away of music in some form is a kind of staving-off, a keeping-at-bay, of an existential anxiety. The duple-time rhythms that predominate in my invented, parodic, music align with a bodily connection, and my inner music is invariably felt as muscular

exertions and proprioceptive changes, inseparably from its being "heard" in the imagination.

So perhaps this music is the form taken by a continuous stimulus to proprioception, to embodied self-presence—a way of making sure that in some weird sense the "I" that is my embodied self is "still there," a repeated checking that the general bodily disposition is what it usually is, and is not fading into dissolution. This aligns strongly, I think, with Damasio's suggestion that "primordial feelings" are, through their very lifelong qualitative continuity, the likeliest bodily ground of personal identity. If that is true, then perhaps it is not so surprising that in my own case it is music, the element of my greatest living joys, that both furnishes my most disruptive modes of existential restlessness and anxiety, and involuntarily placates them with bodily, kinaesthetic, reassurance.

Can this be restlessness be managed, tamed, redeemed in any way? Can the reassurance be summoned? Can it offer a clue as to *why* music-as-therapy can work? I believe it can.

"It is clear," says Sacks, "that music, above all else, can kickstart a damaged or inhibited motor system into action again." (Sacks 2007, 236) He was of course speaking from personal experience. His kinaesthesia and proprioception temporarily disrupted, he had forgotten how to walk; through music, Mendelssohn, *fortissimo*, he "remembered" again. (Sacks 1984, 108) But the music was *inner music*, recalled in the imagination. In music— "the very prototype of inwardness, being, soul" (Sacks 1984, 167)—we have both the materials and the means by which, in imagination, we recall not merely the fluency of movement and agency but the inner self-experience—the "primordial feelings" that Damasio identifies as kinaesthetically inbound to all temporal experience—that give continuity between our pre-morbid and our presently-

morbid selves. Our ordinary kinaesthesia, our ordinary proprioception, our pre-morbid self-experience is temporarily (and sometimes cumulatively and lastingly) restored to our sense of who, and how, we are.

A feeling recalled is a feeling restored, for as long as the recalling is itself felt; and in music-as-therapy the recalling is nothing other than our musical imaginations at work. The musical imagination is of course an unruly thing, as my inner musical compulsions constantly remind me; but it can work for good as well as for ill, and when it does so it allows us both existential reassurance and a renewed glimpse of joy.

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