

mother, telling me that Heidi had started a new job—and it sounds as though she may have found another calling:

She is working at a convalescent home and just loves it. The patients say that Heidi's bright smile cheers them up and helps them feel better. Heidi enjoys the socializing so much that she has asked if she can visit the patients on the weekends. She plays bingo, paints their fingernails, gets them coffee, and, of course, talks and listens. This job is a perfect fit for her.

from Musicophilia by Oliver Sacks

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### Music and Identity: Dementia and Music Therapy

Of the five hundred or so neurological patients at my hospital, about half have dementia of various sorts—from multiple strokes, from cerebral hypoxia, from toxic or metabolic abnormalities, from brain injuries or infections, from frontotemporal degeneration, or, most commonly, from Alzheimer's disease.

Some years ago, Donna Cohen, a colleague of mine, after studying our large population of patients with Alzheimer's, coauthored a book called *The Loss of Self*. For various reasons, I deplored the title (though it is a very good book as a resource for families and caregivers) and set myself to contradicting it, lecturing here and there on "Alzheimer's Disease and the Preservation of Self." And yet, I am not sure that we were in real disagreement.

Certainly someone with Alzheimer's loses many of his powers or faculties as the disease advances (though this process may take many years). The loss of certain forms of memory is often

an early indicator of Alzheimer's, and this may progress to a profound amnesia. Later there may be impairment of language and, with the involvement of the frontal lobes, loss of subtler and deeper powers, like judgment, foresight, and the ability to plan. Eventually a person with Alzheimer's may lose some fundamental aspects of self-awareness, in particular the awareness of their own incapacities. But does the loss of one's self-awareness, or some aspects of mind, constitute loss of *self*?

Shakespeare's Jaques, in *As You Like It*, considering the seven ages of man, sees the final one as "sans everything." Yet though one may be profoundly reduced and impaired, one is never sans everything, never a *tabula rasa*. Someone with Alzheimer's may undergo a regression to a "second childhood," but aspects of one's essential character, of personality and personhood, of self, survive—along with certain, almost indestructible forms of memory—even in very advanced dementia. It is as if identity has such a robust, widespread neural basis, as if personal style is so deeply ingrained in the nervous system, that it is never wholly lost, at least while there is still any mental life present at all. (This, indeed, is what one might expect if perceptions and actions, feelings and thoughts, have molded the structure of one's brain from the start.) This is poignantly clear in such memoirs as John Bayley's *Elegy for Iris*.

In particular, the response to music is preserved, even when dementia is very advanced. But the therapeutic role of music in dementia is quite different from what it is in patients with motor or speech disorders. Music that helps patients with parkinsonism, for example, must have a firm rhythmic character, but it need not be familiar or evocative. With aphasics it is crucial to have songs with lyrics or intoned phrases, and interaction with a therapist. The aim of music therapy in people with dementia is far broader than this—it seeks to address the emotions, cognitive powers, thoughts, and

memories, the surviving "self" of the patient, to stimulate these and bring them to the fore. It aims to enrich and enlarge existence, to give freedom, stability, organization, and focus.

This might seem a very tall order—nearly impossible, one would think, seeing patients with advanced dementia, who may sit in a seemingly mindless, vacant torpor or scream agitatedly in incommunicable distress. But music therapy with such patients is possible because musical perception, musical sensibility, musical emotion, and musical memory can survive long after other forms of memory have disappeared.<sup>1</sup> Music of the right kind can serve to orient and anchor a patient when almost nothing else can.

I see this continually with my patients, and I hear of it constantly in the letters I receive. One man wrote to me about his wife:

Although my wife has Alzheimer's—diagnosed at least seven years ago—the essential person miraculously remains. . . . She plays piano several hours daily, very well. Her present ambition is to memorize the Schumann A-minor Piano Concerto.

And yet this is a woman who is, in most other spheres, grossly forgetful and disabled. (Nietzsche, too, continued to improvise at

1. Elliott Ross and his colleagues in Oklahoma published a case study of their patient S.L. (see Cowles et al., 2003). Although he was demented, probably from Alzheimer's disease, S.L. could still remember and skillfully play a large musical repertoire from the past, even though he had "profound disturbance in both recall and recognition on other anterograde memory tests," such as word lists or the sounds of musical instruments. He also showed "marked impairment on measures of remote memory [famous faces, autobiographical memory]." Even more remarkably, this amnesic and demented man was able to learn a new song on his violin, despite having virtually no episodic memory—a situation reminiscent of that of Clive Wearing (in chapter 15).

There have been formal studies of the persistence of musical powers in advanced dementia, including those of Cuddy and Duffin, 2005; Fornazzari, Castle, et al., 2006; and Crystal, Grober, and Masur, 1989.

the piano long after he had been rendered mute, demented, and partially paralyzed by neurosyphilis.)

The extraordinary neural robustness of music is also brought out in the following letter I was sent, about a well-known pianist:

[He] is 88 now and has lost language . . . but he plays every day. When we read through Mozart, he points back and ahead well in advance of the repeats. Two years ago we recorded the complete four-hand repertoire of Mozart that he had recorded . . . in the 1950s. While his language has begun to fail him, I love his recent playing and conception even more than the earlier recording.

Especially moving here is not merely the preservation but the apparent heightening of musical powers and sensitivity, as other powers wane. My correspondent concluded: "The extremes of musical accomplishment and illness are so plainly evident in his case; a visit becomes miraculous as he transcends the disease with music."

MARY ELLEN GEIST, a writer, contacted me a few months ago about her father, Woody, who began to show signs of Alzheimer's thirteen years ago, at the age of sixty-seven. Now, she said,

The plaque has apparently invaded a large amount of his brain, and he can't remember much of anything about his life. However, he remembers the baritone part to almost every song he has ever sung. He has performed with a twelve-man a capella singing group for almost forty years. . . . Music

is one of the only things that keep him grounded in this world.

He has no idea what he did for a living, where he is living now, or what he did ten minutes ago. Almost every memory is gone. Except for the music. In fact, he opened for the Radio City Music Hall Rockettes in Detroit this past November. . . . The evening he performed, he had no idea how to tie a tie . . . he got lost on the way to the stage—but the performance? Perfect. . . . He performed beautifully and remembered all the parts and words.<sup>2</sup>

A few weeks later, I had the pleasure of meeting Mr. Geist, his daughter, and his wife, Rosemary. Mr. Geist was, in fact, carrying a newspaper, a neatly furled *New York Times*—though he did not know it was the *New York Times*, nor (apparently) what a "newspaper" was.<sup>3</sup> He was well-groomed and neatly dressed, though this, his daughter later told me, had needed supervision, for left alone he might put on his pants backwards, not recognize his shoes, shave with toothpaste, and so on. When I asked Mr. Geist how he was, he replied, pleasantly, "I think I am in good health." This reminded me of how Ralph Waldo Emerson, after he became severely demented, would answer such questions by saying,

2. It was similar, Gena Raps tells me, with the great pianist Artur Balsam, who became so amnesic from Alzheimer's disease that he lost all memory of the major events of his life and was confused about the identity of friends he had known for decades. At his final concert at Carnegie Hall, it was not clear that he even knew he was there to perform, and there was another pianist backstage prepared to take his place. But he performed magnificently, as always, and received tremendous reviews.

3. Besides singing, Woody retains certain other types of procedural memory. If one shows him a tennis racket, he may fail to recognize it, even though he was once a good amateur player. But put the racket in his hand, on a tennis court, and he knows how to use it—indeed, he can still play a mean game of tennis. He does not know what the racket is, but he knows how to use it.

"Quite well; I have lost my mental faculties but am perfectly well."<sup>4</sup>

Indeed, there was an Emersonian sweetness and reasonableness and serenity in Woody (as he immediately introduced himself)—he was profoundly demented, without doubt, but he had preserved his character, his courtesy, his thoughtfulness. Despite the manifest ravages of Alzheimer's—his loss of event memory and of general knowledge, his disorientation, his cognitive defects—the behaviors of civility, it seemed, were ingrained, perhaps at a much deeper and older level. I wondered whether these were merely habits, mimicries, residues of once-meaningful behavior, now empty of feeling and meaning. But Mary Ellen had never thought this—she felt her father's civility and courtesy, his sensitive and thoughtful behavior, to be "almost telepathic."

"The way he reads my mother's face to find out how she is doing," she wrote, "the way he reads her mood, the way he reads people in social situations and acts accordingly . . . is beyond mimicking."

Woody seemed to be tiring of questions to which he could not supply an answer (such as "Can you read this?" or "Where were you born?"), so I asked him to sing. Mary Ellen had told me how, since she could first remember, the whole family—Woody, Rosemary, and the three daughters—had sung together, and how singing had always been a central part of family life. Woody had been whistling when he came in, whistling "Somewhere over the Rainbow," so I asked him to sing it. Rosemary and Mary Ellen joined in, and the three of them sang beautifully, each harmonizing in different ways. When Woody sang, he showed all the expres-

4. Emerson developed a dementia, probably Alzheimer's, in his early sixties, and this gradually grew more severe over the years, though he retained his sense of humor and ironical insight almost to the end. The trajectory of Emerson's illness is portrayed with great sensitivity by David Shenk in his remarkable book, *The Forgetting: Alzheimer's: Portrait of an Epidemic*.

sions, emotions, and postures appropriate to the song, and to singing in a group—turning to the others, awaiting their cues, and so on. This was so with all the songs they sang—whether they were exuberant, jazzy, lyrical and romantic, funny, or sad.

Mary Ellen had brought along a CD Woody had recorded years before with his a cappella group, the Grunyons, and when we played this, Woody sang along beautifully. His musicality, at least his performing musicality, like his civility and equanimity, was completely intact—but again, I wondered if it could be just a mimesis, just a performance, representing feelings and meanings he no longer had. Certainly Woody *looked* more "present" when singing than at any other time. I asked Rosemary whether she felt that he, the man she had known and loved for fifty-five years, was totally present in his singing. She said, "I think he probably is." Rosemary looked tired, exhausted, from her almost nonstop caring for her husband, and the inch-by-inch way in which she was being widowed, as he lost more and more of what used to constitute his self. But she was least sad, least widowed, when they all sang together. He seemed so present at such times that his absence a few minutes later, his forgetting that he had sung (or could sing), would always come as a shock.

Given her father's powerful musical memory, Mary Ellen asked, "Why can't we use this as an opening . . . embed shopping lists, information about himself, in his songs?" I said I feared this would not work.

Mary Ellen had, in fact, found this out already for herself. "Why couldn't we sing him his life story?" she had written in her journal in 2005. "Or the directions from one room to the next? I've tried—it doesn't work." I too had had this thought, in relation to Greg, an intelligent, very musical, very amnesic patient I had seen years before. Writing about him in the *New York Review of Books* in 1992, I observed:

It is easy to show that simple information can be embedded in songs; thus we can give Greg the date every day, in the form of a jingle, and he can readily isolate this, and say it when asked—give it, that is, without the jingle. But what does it mean to say, "This is December the 19th, 1991," when one is sunk in the profoundest amnesia, when one has lost one's sense of time and history, when one is existing from moment to moment in a sequenceless limbo? "Knowing the date" means nothing in these circumstances. Could one, however, through the evocativeness and power of music, perhaps using songs with specially written lyrics—songs which relate something valuable about himself or the current world—accomplish something more lasting, deeper? Give Greg not only "facts," but a sense of time and history, of the relatedness (and not merely the existence) of events, an entire (if synthetic) framework for thinking? This is something which Connie Tomaino and I are trying to do now. We hope to have an answer in a year.

But by 1995, when "The Last Hippie" was republished in book form (in *An Anthropologist on Mars*), we had got our answer, and it was resoundingly negative. There was not, and perhaps could never be, any carryover from performance and procedural memory to explicit memory or usable knowledge.

While, at least in someone as amnesic as Greg or Woody, singing cannot be used as a sort of back door to explicit memory, still the act of singing is important in itself. Finding, remembering anew that he *can* sing is profoundly reassuring to Woody, as the exercise of any skill or competence must be—and it can stimulate his feelings, his imagination, his sense of humor and creativity, and his sense of identity as nothing else can. It can enliven him, calm him, focus and engage him. It can give him

back himself, and not least, it can charm others, arouse their amazement and admiration—reactions more and more necessary to someone who, in his lucid moments, is painfully aware of his tragic disease and sometimes says that he feels "broken inside."

The mood engendered by singing can last awhile, sometimes even outlasting the memory that he *has* sung, which may be lost within a couple of minutes. I could not help thinking of my patient Dr. P., the man who mistook his wife for a hat, and how vital singing was for him, and how my "prescription" for him was a life that consisted entirely of music and singing.

Perhaps Woody, though he could not have put it into words, knows that this is the case for him, for in the last year or so he has taken to whistling. He whistled "Somewhere over the Rainbow" softly to himself for the entire afternoon we spent together. Whenever he is not actively singing or otherwise engaged, Mary Ellen and Rosemary told me, he now whistles all the while. Not only through his waking hours; he whistles (and sometimes sings) in his sleep—so, at least in this sense, Woody is accompanied by music, calls on it, around the clock.<sup>5</sup>

**W**OODY, OF COURSE, has been musically gifted from the start, and still has these gifts even though he is severely demented. Most patients with dementia are not specially gifted in this regard, and yet—remarkably, and almost without exception—they retain their musical powers and tastes even when most other mental powers have been severely compromised. They can recognize music and respond to it emotionally even when little else can get through. Hence the great importance of access to

5. Mary Ellen Geist has written very movingly of her father's dementia—both musically and otherwise—and of a family adapting to the challenges of dementia in her 2008 memoir, *Measure of the Heart: A Father's Alzheimer's, a Daughter's Return*.

music, whether through concerts, recorded music, or formal music therapy.

Sometimes music therapy is communal, sometimes individual. It is astonishing to see mute, isolated, confused individuals warm to music, recognize it as familiar, and start to sing, start to bond with a therapist. It is even more astonishing to see a dozen deeply demented people—all in worlds or nonworlds of their own, seemingly incapable of any coherent reactions, let alone interactions—and how they respond to the presence of a music therapist who begins to play music in front of them. There is a sudden attention: a dozen pairs of distracted eyes fasten on the player. Torpid patients become alert and aware; agitated ones grow calmer. That it may be possible to gain the attention of such patients and hold it for minutes at a time is itself remarkable. Beyond this, there is often a specific engagement with what is being played (it is usual, in such groups, to play old songs that everyone of a similar age and background will have known).

Familiar music acts as a sort of Proustian mnemonic, eliciting emotions and associations that had been long forgotten, giving the patient access once again to moods and memories, thoughts and worlds that had seemingly been completely lost. Faces assume expression as the old music is recognized and its emotional power felt. One or two people, perhaps, start to sing along, others join them, and soon the entire group—many of them virtually speechless before—is singing together, as much as they are able.

"Together" is a crucial term, for a sense of community takes hold, and these patients who seemed incorrigibly isolated by their disease and dementia are able, at least for a while, to recognize and bond with others. I receive many letters about such effects from music therapists and others who play or sing music to the demented. One Australian music therapist, Gretta

Sculthorp, after working in nursing homes and hospitals for ten years, expressed this eloquently:

At first I thought I was providing entertainment, but now I know that what I do is act as a can-opener for people's memories. I can't predict what will be the trigger for each person, but there is usually something for everyone, and I have a part of my brain that "watches" in stunned amazement what is happening. . . . One of the loveliest outcomes of my work is that nursing staff can suddenly see their charges in a whole new light, as people who have had a past, and not only a past but a past with joy and delight in it.

There are listeners who come and stand beside or in front of me, touching me, for the whole time. There are always people who cry. There are people who dance, and people who join in—for operetta or for Sinatra songs (and *Lieder*, in German!). There are disturbed people who become calm, and silent people who give voice, frozen people who beat time. There are people who don't know where they are, but who recognize me immediately, as "the Singing Lady."

Music therapy for patients with dementia traditionally takes the form of providing old songs, which, with their specific tunes and contents and emotions, call on personal memories, evoke personal responses, and invite participation. Such memories and such responses may become less available as dementia becomes more profound. Yet some sorts of memory and response almost always survive—above all, the sort of motor memory and motor response that goes with dancing.

There are many levels at which music can call to people, enter them, alter them—and this is as true for demented patients as it is for the rest of us. We bond when we sing together, sharing the

specific affects and connections of a song; but bonding is deeper, more primal, if we dance together, coordinating our bodies and not just our voices. "The body is a unity of actions," Luria wrote, and if there is no unity, nothing active or interactive going on, our very sense of being embodied may be undermined. But holding someone, making the movements of dance with them, may initiate a dancing response (perhaps in part by the activation of mirror neurons). In this way, patients who are otherwise inaccessible can be animated, enabled to move and to regain, at least for a while, a sense of physical identity and consciousness—a form of consciousness that is perhaps the deepest of all.

Drum circles are another form of music therapy that can be invaluable for people with dementia, for, like dance, drumming calls upon very fundamental, subcortical levels of the brain. Music at this level, a level below the personal and the mental, a purely physical or corporeal level, needs neither melody nor the specific content or affect of song—but what it does need, crucially, is rhythm. Rhythm can restore our sense of embodiment and a primal sense of movement and life.

**W**ITH A MOVEMENT disorder like Parkinson's disease, there is no significant carryover effect with the power of music. The patient can regain a fluent motor flow with music, but once the music stops, so too does the flow. There can, however, be longer-term effects of music for people with dementia—improvements of mood, behavior, even cognitive function—which can persist for hours or days after they have been set off by music. I see this in the clinic almost daily, and constantly receive descriptions of such effects from others. Jan Koltun, who coordinates caregiving to the elderly, wrote to me with this story:

One of our caregivers . . . went home and made the simple intervention of turning on the classical music channel in front of the couch where her mother-in-law had mostly sat watching TV "shows" for the preceding three years. The mother-in-law, diagnosed with dementia, had kept the house awake at night when the caregivers turned off the TV in order to get some sleep. Daytimes, she would not get off the couch for toileting or family meals.

After the channel change, she had a profound behavioral change: She asked to come to breakfast the next morning, and did not want to watch her usual TV fare the next day, and asked for her long-neglected embroidery the next afternoon. Over the next six weeks, in addition to communicating with her family and taking more interest in her surroundings, she mostly listened to music (primarily country and western, which she loved). After six weeks, she died peacefully.

Sometimes Alzheimer's disease may provoke hallucinations and delusions, and here, too, music may provide a solution to an otherwise often intractable problem. Bob Silverman, a sociologist, wrote to me about his mother, who, at ninety-one, had had Alzheimer's for fourteen years and was living in a nursing home when she started to hallucinate:

She told stories, and acted them out. She seemed to think these things were really happening to her. The names of the people in the stories were real, but the action was fiction. In telling many of the stories, she often swore and got angry, which she never did before the disease. The stories usually had a kernel of truth. It was fairly clear to me that there were some pretty deep-seated dislikes, resentments, perceived

slights, and so on, that were being acted out. . . . In any case, she was exhausting herself and everyone around her.

But then he bought his mother an MP3 player with about seventy tunes on it that were constantly recycled—these were all familiar tunes which she recognized from her youth. Now, he wrote, “She listens on headphones so no one else is disturbed. *The stories just stop*, and every time a new tune comes on, she will say something like, ‘Isn’t that marvelous?’ gets animated and sometimes sings along.”

Music can also evoke worlds very different from the personal, remembered worlds of events, people, places we have known. This was brought out in a letter from Kathryn Koubek:

I’ve read many times that music is a whole other reality. It wasn’t until my father’s last days, when it became his *only* reality, that I began to understand what that means. Nearly a hundred years old, my father had begun to lose his grip on this reality. His talk became disconnected; his thoughts strayed; his memory was fragmented and confused. I made a modest investment in a portable CD player. When the talk became distracted I would simply put in a beloved piece of classical music, press the “play” button and watch the transformation.

My father’s world became logical and it became clear. He could follow every note. . . . There was no confusion here, no missteps, no getting lost, and, most amazing, no forgetting. This was familiar territory. This was home, more than all the homes he had ever lived in. . . . This was the reality.

Sometimes my father would respond to the beauty of the music by simply weeping. How did this music thrill when all other thrills had been forgotten—my mother, young with

a lovely face, my sister and I as children [his darlings], the joys of work, of food, of travel, of family?

What did this music touch? Where was this landscape where there is no forgetting? How did it free another kind of memory, a memory of the heart not tethered to time or place or events or even loved ones?

The perception of music and the emotions it can stir is not solely dependent on memory, and music does not have to be familiar to exert its emotional power. I have seen deeply demented patients weep or shiver as they listen to music they have never heard before, and I think that they can experience the entire range of feelings the rest of us can, and that dementia, at least at these times, is no bar to emotional depth. Once one has seen such responses, one knows that there is still a self to be called upon, even if music, and only music, can do the calling.

There are undoubtedly particular areas of the cortex subserving musical intelligence and sensibility, and there can be forms of amnesia with damage to these. But the emotional response to music, it would seem, is widespread and probably not only cortical but sub-cortical, so that even in a diffuse cortical disease like Alzheimer’s, music can still be perceived, enjoyed, and responded to. One does not need to have any formal knowledge of music—nor, indeed, to be particularly “musical”—to enjoy music and to respond to it at the deepest levels. Music is part of being human, and there is no human culture in which it is not highly developed and esteemed. Its very ubiquity may cause it to be trivialized in daily life: we switch on a radio, switch it off, hum a tune, tap our feet, find the words of an old song going through our minds, and think nothing of it. But to those who are lost in dementia, the situation is different. Music is no luxury to them, but a necessity, and can have a power beyond anything else to restore them to themselves, and to others, at least for a while.