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Composing Concertos in the Key of Rx

By MATTHEW GUREWITSCH

REMEMBER the [Mozart](#) Effect? As propounded by the news media, the message was that listening to Mozart made children smarter. The science was full of holes, but the notion appealed, and a growing body of research has since suggested that music, classical music in particular, is somehow good for us. The field is still short on evidence, but it has started a lively conversation between scientists and other experts.

“Listening to finer music and attending concerts on a consistent basis makes your real age about four years younger,” Dr. Michael F. Roizen — the chief wellness officer of the Wellness Institute at the Cleveland Clinic, said recently. “Whether that’s due to stress relief or other properties, we see decreases in all-cause mortality, reflecting slower aging of arteries as well as cancer-related and environmental factors. Attending sports events like soccer or football offers none of these benefits.”

That music touches the core of our being is a discovery as old as human consciousness. Plato grappled with the powers of music in “The Laws” and other dialogues, and he was hardly the first to do so. Shakespeare in several of his most poignant scenes dramatized music’s soothing effect on troubled spirits.

Healers of many sorts try to harness music for therapeutic purposes, if only as an adjunct to crystals, perfumes and green tea. But could music ever take its place as medicine?

One expert who is betting that it will is Vera Brandes, the director of the research program in music and medicine at the Paracelsus Private Medical University in Salzburg, Austria. “I am the first musical pharmacologist,” Ms. Brandes said last fall in Vienna. In that capacity she is developing medication in the form of music, dispensed as a prescription. To market the product line, she helped found Sanoson (sanoson.at), a company that also designs custom music systems for medical facilities.

“We are preparing for the launch of our therapies in Germany and Austria in the fall of 2009,” she said, “and are anticipating the U.S. launch in 2010.”

Here is how the treatment works. Once the doctor has established a diagnosis, the patient is sent home with a listening protocol and music loaded onto a player much like an iPod. Timing is critical.

“Calming music heard at an ascending point in your circadian cycle wouldn’t calm you,” Ms. Brandes said. “It may even annoy you.” The technology — which includes special headsets and formatting as protection against piracy — is proprietary. A patent application has been filed with the [United States Patent and Trademark Office](#).

The music is proprietary too. To avoid the interference of personal associations, the tracks consist entirely of original material. “In our research,” Ms. Brandes said, “we have found that when people are listening to music they know, their reactions are entirely different.”

Dr. Roizen and Ms. Brandes crossed paths last August at a symposium entitled “Music and the Brain,” presented by the Cleveland Clinic and the [Cleveland Orchestra](#) during the orchestra’s residency at the [Salzburg Festival](#). Dr. Roizen, who is an author (with [Mehmet C. Oz](#)) of “You: The Owner’s Manual” and its numerous best-selling sequels, delivered solid substance with a showman’s flair in his talk “The Beneficial Effects of Music on Your Health.” Ms. Brandes, who was working on the program for Mozart & Science 2008, an international congress in Vienna last November, was in attendance and found that she shared with Dr. Roizen a passion for quantifying health effects that many have long taken on faith.

Since Plato and Shakespeare, natural scientists, many of them musicians themselves, have been looking at music with an ever more analytical eye. In the utilitarian 20th century, Muzak built an empire (now in Chapter 11 bankruptcy proceedings) on the premise that background music in the workplace could boost productivity. Dr. [Oliver Sacks](#), that inveterate explorer of uncharted regions of neurology, devoted his latest best-seller, “Musicophilia,” to freakish effects of music on the brain. And as anyone who owns an iPod knows, personal playlists can work small wonders on mood and well-being.

But how?

Like apothecaries of old, who distilled extracts from nature’s store of herbs and plants, Ms. Brandes and her associates analyze music of all kinds to tease out its “active ingredients,” which are then blended and balanced into medicinal compounds. Though they steer clear of gross pathologies or infectious diseases, they claim their methods have broad

application in psychosomatic disorders, pain management and what Ms. Brandes calls “diseases of civilization”: anxiety, depression, insomnia and certain types of arrhythmia. The pharmacopeia stands at about 55 tracks of medicinal music, with more in the pipeline.

In a pilot study, which in 2008 received a citation at the annual scientific meeting of the American Psychosomatic Society in Baltimore, Ms. Brandes and international associates investigated the effects of music on patients suffering from hypertension for which no organic cause can be found.

“Conventionally hypertensive patients are treated with beta blockers, which suppress their symptoms,” Ms. Brandes said. “Music can address the psychosomatic root causes.”

According to her study, listening to a specially designed music program for 30 minutes a day, five days a week, for four weeks, patients experienced clinically significant improvements in heart-rate variability, a major indicator of autonomous nervous function. In her next study Ms. Brandes will subject these findings to a full-fledged clinical trial.

Formerly a producer of musical events and recordings, Ms. Brandes, 52, masterminded the international breakthrough of the harp phenomenon Andreas Vollenweider and staged [Keith Jarrett](#)’s legendary concert in Cologne, Germany, to name just two highlights of an impressive résumé. But a near-fatal car crash in 1995 caused her to begin contemplating a change of career.

“I broke Vertebrae 11 and 12, missing the spinal cord by a millimeter,” Ms. Brandes said. “The doctor said, ‘I can’t do much for you for a while, but you can sing if you like.’ ” The medical team expected to keep her immobilized for 10 to 14 weeks.

As it happened, Ms. Brandes was sharing her room with a Buddhist, whose friends came and chanted daily. After just two weeks in the hospital, an M.R.I. showed that her spine was completely healed. “Everyone said it was a miracle,” Ms. Brandes said. “They sent me home. It got me thinking.”

Three years later, even more decisive for the work that was to follow, Ms. Brandes spent three months at the bedside of her mother, who was in a coma with a rare blood cancer.

“I gave her a headset, and I played music for her,” Ms. Brandes said. “Because I knew her so well, I could tell from the subtlest changes in her hands and face what she liked and what she didn’t like. My mother was my first case study.”

Initially the dying woman responded best to the classical Spanish guitar music she had always enjoyed: Andrés Segovia, Narciso Yepes. But as her condition worsened, those old favorites seemed to distress her, and gentle Minimalism — “nothing complex,” Ms. Brandes said — proved more beneficial.

As suggestive and as personally meaningful as this experience must have been, Ms. Brandes, who holds no advanced degree in medicine or science, knew that her nascent theories would never gain acceptance without clinical trials by the book. “From the first,” she said, “I was determined to satisfy the strictest Western scientific criteria.”

Subjects in the studies wear smart watches that monitor seven physiological values, including heart rate and electrical muscular activity. (The placebos in her work are nature sounds.)

In general what has power to heal has potential to harm. In the case of music, the truism appears not to apply. Allegations of adverse reactions, addiction or overdoses, to cite some of the most serious dangers, are rare, and those that might be cited seem either flatly incredible or specious in the extreme. In Wagner’s time some predicted that “Tristan und Isolde” would drive people insane, but where were the mental cases? And in our time we hear of military interrogators administering music nonstop at deafening volume as a form of torture lite. But surely the torture lies in sleep deprivation, repetition and trauma to the inner ear, not in exposure to the music as such.

In the fall, over several days in Vienna, I was able to sample Sanoson’s music at appropriate times of day. A wake-up program after a half-hour nap began with nature sounds, developed a soft-rock rhythm, added a voice singing wordlessly and ended on a more chugging beat, sending me off in fine form for whatever the rest of my day might hold. A soothing evening program sounded like a snatch of mock Minimalism, unembellished by the variations and surprises that make concert music by Terry Riley, [Philip Glass](#) and John Adams a lot more interesting.

But the objective of Sanoson composers (Ms. Brandes herself and two others, their anonymity guarded religiously) is not to write concert music of independent aesthetic merit, any more than an apothecary is out to concoct choice cordials. It is to deliver specific stimuli — dosages of rhythm, harmony or dissonance and timbre — at the appropriate time and in an effective sequence.

Similar principles, applied to more nebulous ends, underlie the Internet-based beta site Sourcetone Interactive Radio (sourcetone.com). Billed as “the world’s premiere music health service,” Sourcetone streams music in a dozen genres, choosing tracks according to the user’s mood as indicated on a graphic Emotion Wheel. Company literature says that “the service is designed to promote health through the power of music by delivering playlists that promote desired emotional states such as relaxation, invigoration, stimulation and happiness.”

A glorified jukebox? Interviewed in New York in February, the psychologist Jeff Berger, a founder and executive vice president of Sourcetone, bristled at that description, even as he backed off from any specific medical claims. Yet he expressed hope that Sourcetone would in time prove valuable — in the treatment of brain injuries, for instance — in ways he declined to elaborate.

Though that would seem a stretch, Sourcetone uses research conducted jointly with the Beth Israel Deaconess Medical Center in Boston and Harvard Medical School, where the neurologist Gottfried Schlaug studies the effects of musical activity on brain function and plasticity. Dr. Schlaug (who at one time seriously considered a career as an organist and choir director) said recently that his work with Sourcetone has essentially consisted of quantifying subjective personal responses to specific pieces of music in an objective way.

Of far deeper medical interest, he added, are his efforts to provide a “neurobiological substrate” for existing forms of music therapy already in wide use: to prove that they work and how they work. An example would be melodic-intonation therapy, which uses singing to help stroke patients relearn language.

“I think it’s important to engage and make music,” Dr. Schlaug said, “not just to listen.”

Stefan Koelsch, a senior research fellow in neurocognition of music and language at the University of Sussex in Brighton, England, agrees, and is working on participatory musical treatments for depression. But in the long term, he sees broader possibilities.

“Physiologically, it’s perfectly plausible that music would affect not only psychiatric conditions but also endocrine, autonomic and autoimmune disorders,” he said. “I can’t say music is a pill to abolish these diseases. But my vision is that we can come up with things to help. This work is so important. So many pills have horrible side effects, both physiological and psychological. Music has no side effects, or no harmful ones.”

As Ms. Brandes sees it, some things down the road may be very different, but others should not change. “Say a patient comes in suffering from depression,” she said. “The first step is always to see the physician. But then there will be the choice of treatment options: the shrink, [Prozac](#) or music.”