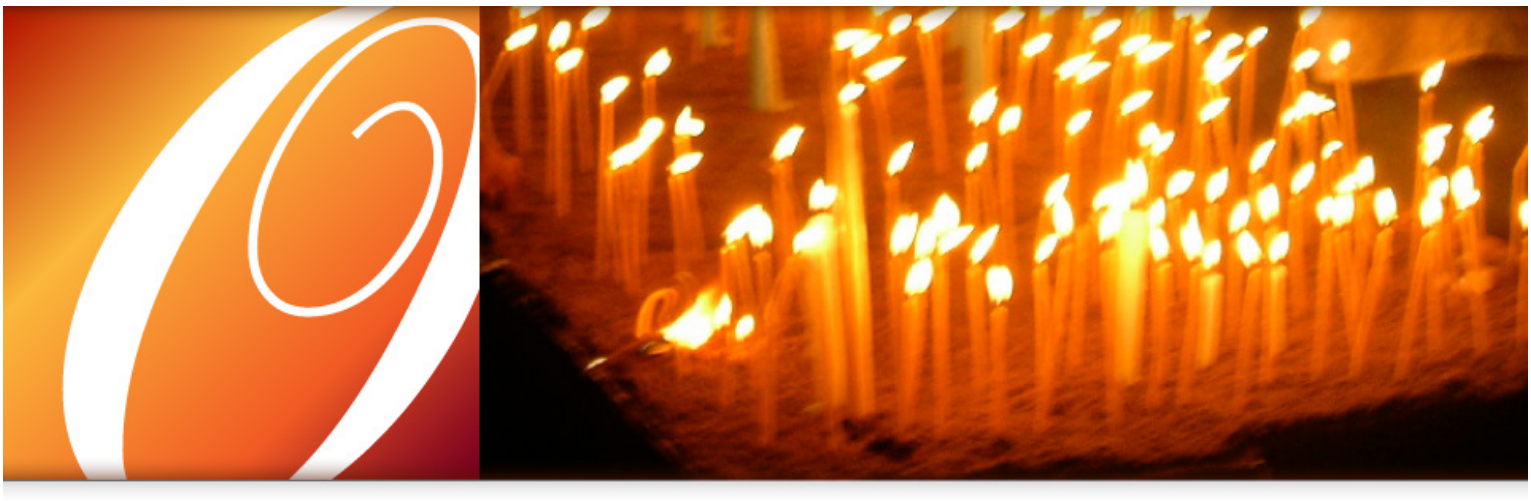

Our Constant Companion

BY PAOLO PIETROPAOLO

Or… WE DON'T KNOW WHAT IT IS, BUT WE'VE GOTTA DO IT.

A few hours after the devastating tsunami struck Sri Lanka on Boxing Day, 2004, my wife Natasha and I landed at Bandaranaike International Airport outside Colombo for a family visit. We didn't yet know what had happened. Her brother was there to pick us up, and he said there had been a giant tidal wave. Beyond that, even he knew very little.

As the full extent of the disaster became apparent, both of us felt that we had to help in some way, whatever way we could. So we went to volunteer at the Colombo office of the Red Cross. At a small, dark table in a large, whitewashed room, the clerk sized us up. She asked us what our professions were. Were we doctors?

Both of us have music degrees that led to careers as radio producers.

"Thanks. We'll call you if we need you," she said.

As we emerged onto Colombo's chillingly silent streets, I felt foolish, and, worse, utterly useless. That feeling grew and overwhelmed me as the death toll mounted.

Why had I chosen a musical career path? Music couldn't change the world. Music couldn't save lives.

White flags of mourning were strung from roof to roof in every village. They drooped in the humid heat, silent symbols of a nation's sorrow.

Music? Music was. . . futile.

And yet, every human culture that we know of, past and present, has had music. Not a single one has been without music in some form.

The earliest instruments now known, bone flutes found in Germany, date to 35,000 years ago. Bone weathers the millennia relatively well; wood and hides don't. It's therefore possible our ancestors were using drums earlier than 35,000 years ago. And before that, we had our voices.

It may seem trivial to think of music in the context of evolution. How can a song protect you from a sabre-toothed tiger, from a brush fire, from a tsunami? Spear-grasping opposable thumbs are one thing, bone flutes quite another.

So why? Why devote so much energy to an activity that doesn't seem to be a necessity for survival? What prompted the first human voices to ring out over the savannah?

In his bestselling book How the Mind Works, evolutionary psychologist Steven Pinker writes, "Compared with language, vision, social reasoning, and physical know-how, music could vanish from our species and the rest of our lifestyle would be virtually unchanged." He goes on to posit that music is "auditory cheesecake", that is, something that gives us pleasure, but is an evolutionary side-effect.

In the case of cheesecake, it's the sugar and fat that pushes our pleasure buttons. Sugar and fat are high in energy, and would have been an important source of nourishment for our primate ancestors. But sugar and fat generally don't occur in cheesecake-concentration levels in the hunting and gathering environment; they were harder to come by than dropping by the local dessert boutique. So humans have evolved a taste for sugary fatty foods, likely because those of our primate ancestors that were predisposed to take advantage of such foods whenever they were available were also the ones that tended to survive and reproduce.

That may explain why many of us like cheesecake. It's a wonderful invention that packs a huge sugar-fat punch. But it's certainly not the only high-energy food option, and it could indeed vanish without effect.

In the case of music, Pinker suggests that language is the product of evolution, and music is just a by-product. It pushes our pleasure buttons, reinforcing brain pathways built by evolution for language.

A by-product. Kind of incidental. Inherently pointless.

On New Year's Eve, 2004, music was the furthest thing from our minds. We lit candles for tsunami victims at a vigil at the University of Colombo. It was the most sombre New Year's I've ever experienced, eerily quiet.

If you'd asked me then, I'd have concurred with Pinker's point of view – that music could vanish without effect; that it's no more than a frill.

But now, the music lover within me balks. Music pushes our buttons like nothing else.

For instance, when I listen to Olsen Olsen by Icelandic band Sigur Rós, every note, every beat of every drum, every restatement of the melody calls forth an intense burst of emotion. And it feels even better when I sing along.

Can it be that this thing is accidental? This force that makes us leap to our feet and shout at a concert, or bust out onto the dance floor at a club or a wedding? If anything, those moments are the furthest removed from language; those are the moments that words fail us.

There must be some reason for its existence.

It's the big why of music, a probing question into the nature of a human mystery that is intrinsically ineffable, even when it has lyrics. (And sometimes, especially when it has lyrics.)

And it's a question that's captured the attention of the world's most critical thinkers – those who practice the scientific method.

Daniel Levitin is both neuroscientist and musician, and his lab at McGill university is a leading centre of study probing into the relationship of music to the human brain, teasing apart the connections between harmonies and hormones.

Levitin's name is perhaps the most widely-known linked to this kind of research, thanks to the success of his book This is your brain on music. And it was at Levitin's lab that a key discovery was made: listening to music we like causes the brain to release the hormone dopamine, or "happy juice", as Levitin calls it.

"It must be because music has served some ancient evolutionary purpose," he says. "Why do we get this squirt of happy juice when we listen to music we like? Well, I guess because it's evolution's way of reinforcing us for having music – that must mean music is something evolution wanted us to have."

The first person to write about music and evolution was Charles Darwin, the father of evolution himself. And he found music just as puzzling as the rest of us. Music, he wrote, "must be ranked among the most mysterious" human faculties.

From an evolutionary point of view, he thought it might have once played a similar role as birdsong – to attract a mate. Darwin called this kind of evolutionary pressure sexual selection.

It's easy to get what Darwin was talking about. Think of the womanizing reputations of musicians like Jimmy Page from Led Zeppelin, Jimi Hendrix, or even Niccolò Paganini.

"Music always got me off," says famous rock and roll groupie Pamela des Barres. "I wanted to express myself with Jimmy Page and Mick Jagger instead of your regular old schmo. Makes sense, doesn't it?"

It does make a lot of sense, and it is in fact the leading hypothesis for the evolution of music in scientific circles today. But there's something about music coming from sexual selection alone that doesn't ring completely right.

It's easier to accept as one of the reasons we have music, maybe even the original reason that got the ball rolling. But surely it can't be the only one?

For me, it's just a gut feeling. And it stems from the fact that all of the most moving musical experiences I've had come from the feeling of camaraderie that's often created by making or listening to music with other people.

Think of the way you felt the last time you sang Happy Birthday at a party. Even though everyone's already all physically together in a room, that act of singing together introduces something vital and new. It raises the bar of togetherness.

Singing time is an exclamation mark – a moment apart from normal speaking time. And courtship isn't really a part of that kind of moment.

Some scientists have felt this way about the sexual selection hypothesis as well. Neuroscientist Steven Brown, of McMaster University, points out that Darwin's theory of sexual selection largely rests on what's called sexual dimorphism: physical differences between the genders of a species, like the male peacock's tail, or the vocal control areas in the brains of male canaries and finches, which are larger than those of the females of those species.

No such evidence for sexual dimorphism exists when it comes to humans and our music-making. (And the only apparent dimorphism, the difference in pitch between male and female voices, has nothing to do with the ability or tendency to make music. Women and men are equally capable of making music.)

And consider that most of us first hear music from a decidedly non-sexual source: our mothers, singing to us.

Ellen Dissanayake is a respected independent scholar based in Seattle. She hypothesizes that the mother-infant relationship in proto-humans might have led to the origin of musicality in our species. When mothers coo and sing and speak in a sing-song voice to their babies, there's really a two-way communication going on.

Dissanayake came across the evidence for this in a Scottish experiment that showed that babies and mothers are constantly responding to each other's cues, visually, aurally and with touch. The experiment also showed that reactions and adjustments based on these cues occur very rapidly.

Dissanayake suggests that those proto-human mothers and babies who were better at this "multi-media performance" were better at forming emotional bonds that consequently improved their chances of survival – and thus, the survival of their genes.

The next time you're around a mother and her infant, watch out for the musicality of those cues: repetition, variation, exaggerated pitch contours. Those are all features that we rarely use in spoken language in adult life, but all of them are a strong feature of music.

There's also some exciting research being done with primates that's provided some clues as to why other species have proto-musical abilities that allow them to respond to human music (even if they can't make it themselves.)

In one experiment, psychologist Charles Snowdon and composer David Teie collaborated on an experiment involving cotton-top tamarin monkeys. Teie recorded compositions on his cello and then sped them up so they would fall into the same pitch range as the monkeys' voices. Teie's aim was to compose calming music and agitating music. In both cases, the monkeys displayed the corresponding emotion when they heard the music.

If other primates are indeed hard-wired for a limited form of musical appreciation, then that would suggest that the seeds for music were sown long, long ago.

Like Dissanayake's, this research also points to the idea that music may be useful, evolutionarily speaking, as a form of emotional communication.

Think about another feature of music that's different from speech and language: usually, when we're speaking, we speak one at a time (unless we're arguing). But music allows us to do things together; to sing and clap together. And when we do speak all together, say, when we're chanting at a rally, that's musical too – it has rhythm. ("Hell No, We Won't Go.")

There it is again; the feeling of togetherness, the emotional bonding, brought about by music. Music seems to inherently have that power.

And, yes, there's yet another hypothesis about the evolution of music that's based on precisely this idea of social bonding. It's a controversial and much-discredited hypothesis that music may have conferred survival advantages to groups of humans who were better at carrying out coordinated actions and feeling strong bonds of trust in their group.

A simple thought experiment provides tantalizing theoretical fruit.

"We know that both our ancestors and relatives, like Heidelbergensis and Neanderthalensis, would have hunted large game…with short thrusting spears, hunting within a group," says archaeologist Steven Mithen, author of The Singing Neanderthals.

"You have to be absolutely reliant on the other members of the group. How do you go into those situations knowing that they're going to perform exactly what and when as required? Well, one way that early hominids could have done that was by using music to build up that sense of cooperation and social bonding and oneness between individuals. And I think that's very much what we still see today in terms of choirs."

The problem is, there are all these hypotheses, and all of them feel right when I think about the role music has played in my life. But when I try to weigh them against each other, my head starts to spin.

The only thing that seems to help is to listen to some soothing music – perhaps Reinbert de Leeuw's sublime recording of Erik Satie's Gymnopédies for piano.

When I listen, I'm reminded of how difficult it is to describe the effects of music. They just happen; we can't think about how they're happening as they happen to us. And when I am enjoying listening to music or making music, that's the last thing I want to do anyway. I just want to let it work its magic on me.

And when it does, it affects me in so many different ways, that I feel like I couldn't tease them apart even if I wanted to.

In fact, says Levitin, "There isn't a music part of the brain. Music is distributed widely throughout all different parts of the brain. It's more accurate to say that every part of the brain has a music part."

That's really what makes me think that music must have been our constant companion, through our entire evolutionary journey.

I'm glad scientists are asking probing questions about the exact ways in which it came about. I'm glad especially that they're finding hints that there may indeed be an evolutionary reason for this astonishing and mysterious human habit.

I wonder if all those theories about the evolution of music can't just co-exist, in harmony, so to speak, in the same way that music affects all the different parts of our brains. Maybe, they all played a role, at different stages of human evolution.

But then, I'm a musician and a music fan, not a scientist. So, all I can rely on is my own experience: The childhood music classes where I made my first friends, learning about rhythm and clapping together. The rush of performing Aram Khachaturian's Spartacus suite in my high school orchestra. Feeling jealous of those guys who could play guitar and sing around the campfire during summer camp. The high brought on by dancing with friends and strangers at countless concerts and weddings. And the tsunami song I heard on the radio in Colombo, Sri Lanka, all through January, 2005.

One of the things I remember most about those terrible early days after the tsunami are their somber, silent quality.

But of course, it was never completely silent. There was a form of music taking place during that first week. I heard it everywhere: from the local temple in Rajagiriya, my brother-in-law's neighbourhood in Colombo, to the Sri Dalada Maligawa temple in Kandy, one of the largest temples in Sri Lanka. It was the chanting of Pirith by Buddhist monks, solemn, continuous, bringing comfort to thousands of mourners.

It felt right; more than any words could, listening to it felt like the only way to acknowledge and fathom the scope and horror of what had occurred.

Then, on New Year's Day, a dozen musicians banded together, Sinhalese, Tamil, Muslim, representing all Sri Lanka – to write and record a song of hope.

It seemed like it was coming from every radio in every car and trishaw emerging back onto the mawathas and roundabouts of Sri Lanka's capital city. It was that song that began to evaporate the feeling of futility.

With the music came that most vital ingredient for survival: hope. The will to carry on.

Could music vanish from our species and leave us unchanged? I'm inclined to think not. It's as much a feature of our species as the bushy tail is of Golden-mantled Ground Squirrels. I think that without it, we'd be something different, and probably lesser. We wouldn't be human.

After the tsunami, when I started listening to music again, one of the songs I listened to a lot was I Don't Know What It Is, by Rufus Wainwright.

It still has the power to fill my eyes with tears from the opening notes. And yet somehow, I'm elated, at the same time. It's as if it's bringing me in tune with myself. I can't control it, nor do I want to. In fact, sometimes, I don't know where I'd be without it.

Fin

Image Gallery

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[>> PAOLO PIETROPAOLO BIO]

BOULDER PAVEMENT: Arts and Ideas

boulderpavement is a Canadian on-line multi-media journal. Volume 1, Issue 1 features work centered around music and nature and includes: an interview with composer John Luther Adams & percussionist Steven Schick; artwork by Peter von Tiesenhausen, poetry by Jennifer Still; memoir excerpt by climber and author James Perrin; an audio interview with artist Kate Hartman; and more.

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