

The Psychology of Sound

Imagine if you could change your mood at the flip of a switch—wiping away pain, heartache, stress or the remnants of a bad day just by pressing the “play” button. A growing body of research suggests that using music as a tool to make us happier, stronger and more confident could be more effective than we realise.

By Yi-Hwa Hanna



PHOTOGRAPHY: SHUTTERSTOCK.

It's a simple alternating pattern of just two notes—but play the notes for “E and F” or “F and F sharp” again and again, and we can pretty much guarantee that the hairs on your arm will begin to stand up. That's all it takes to recreate the opening score for *Jaws*, a tune specifically designed to create suspense and, in the words of composer John Williams, grind away at you “just as a shark would do, instinctual, relentless, unstoppable.” It's a widely known fact that musical scores to movies can make or break the emotions and reactions we have to a film—but what about the soundtrack to our own lives, and the role that the music we listen to on a daily basis plays in how we feel, think and react?

Understanding how our bodies process sound—and how that translates into not only what we hear but also the reactions that it stimulates—is a complex process. “It all starts with the bones in our ears, which read the vibrations of the sound around us, explains Jared Alden, a psychotherapist at the German Neuroscience Center: “Our eardrums pick up the finer sounds, but it is our whole ear structure picking up the vibrations. Our brain is then able to transfer that from the ear to the brain. This is done via a complex electro-chemical chain of communication. We are literally wired for sound.”

The way we hear and interpret sound is both a physical and psychological reaction: Once the bones in our ears have begun vibrating, it's then amplified through our middle ear. Next, it instigates motion in the auditory portion of our inner ear, proceeding into both hemispheres of the human brain. Music affects many different parts of the brain: It enters the limbic and paralimbic structures, with the former computing our emotional reactions to music, along with our memory for music, musical experiences and contexts. Our auditory cortex is where it begins, as the brain perceives and analyses the different tones that we hear, while the motor and sensory cortex controls our

movement and tactile feedback through dancing, foot-tapping, and playing an instrument, for instance. “[Our limbic and paralimbic structures] are considered the core structures of emotional processing, since it is well established that a lesion in these structures leads to emotional impairment,” explains Wissam Barada, a neurologist at the American Center for Psychiatry and Neurology. “Increased blood flow to the [brain] leads to an increase of the dopamine synthesis, which acts on the ‘reward cortex’ to induce joy

and satisfaction. Repeated activation of this reward cortex area will ultimately end in the ‘addiction’ of listening to music in specific situations.” In other words, much like a drug, listening to music can stimulate the release of feel-good chemicals in our brains—and the association with these feelings can hard-wire us to feel that we need certain types of music in various situations.

MOOD MUSIC

While it's fairly easy to distinguish whether a piece of music is happy or sad, it's the rhythm and tone that can have the greatest effect on our mood. Various studies have found that our heartbeats can actually sync to the music that we hear, with upbeat tempos leading to faster heartbeats typically associated with joy or excitement, and sedative beats communicating to our bodies that something more calm or sad is occurring. In a study by the University of Missouri, participants were instructed to try to draw up happier feelings while being split into two groups: One was played upbeat music, and the other, more

neutral tunes. Unsurprisingly, those listening to the upbeat tunes recorded overall higher impressions of happiness.

The changes in our mood inspired by music can also affect how we perceive others. In a study by Jacob Jolij and Maaïke Meurs from the Psychology Department of the University of Groningen, test subjects were asked to identify a rapid series of smiley faces while listening to joyful or woeful music. When the subjects were listening to happy music, they were much more likely to correctly identify the happy smiley faces, while those listening to sad music were better able to recognise the sad faces. Even when no smiley was actually presented, participants were more likely to associate the false alarm with the mood they themselves were feeling, suggesting that how we perceive others and the world around us can depend in large part on how we feel ourselves. If you're happy, you're more likely to see happy faces around you, whereas when you're sad you'll be more sensitive to noticing the other unhappy faces around you—



*Just press play
and let the
music make
you smile!*

Healthy Dose

and the music inspiring your mood can play a significant role in that.

Another study conducted at Heriot-Watt University also found that our musical tastes can be correlated with certain personality types, further suggesting that the types of music we tend to reach for play a huge part in how we choose to live our lives and vice versa. For instance, fans of jazz, soul and blues were found to have high self-esteem and be more creative and outgoing, while fans of indie or rock and heavy metal music were found to have low self-esteem. Fans of reggae, opera, rock and heavy metal music were found to be gentle, while fans of chart pop or country and western music were deemed hardworking.

Allowing music to dictate our feelings and emotions—even on a subconscious level—can be liberating, but it can also be used to help engineer the paths we want our lives to take, not to mention a lucrative business for some. “We know that the music in a mall will make us stay there longer, yet we still allow that manipulation. Most of the [musical] work in psychology is in consumer sciences—we see [this applied] in TV commercials, and retail zones. In some restaurants, subtle crowd noises are put into the music tracks—no one wants to be in a totally quiet restaurant, and the longer you stay the more likely you are to spend,” Jared says. Indeed, according to a report by Film Music Magazine, a jingle for a national commercial in the US—the most common musical technique to aid memorability and product recall, one of which can last just seconds—can be worth at least US

\$30,000. Using music in therapy, however, is a much smaller field with potentially limitless gains for our health: “The music is used for people who are not able to reach their own emotions, [where it is] used to evoke a feeling state. Then that emotion is processed in therapy cognitively,” Jared explains.

Melany Oliver, an alternative therapist based in Dubai, uses various musical techniques both personally and in her line of work. One such method is gong therapy: “When I first discovered [it] a few years ago, I had been through a traumatic accident. I started going for regular gong baths with Aspen Aman at The Gong House, which helped me release all of the trauma I was experiencing and the sadness it caused. It gave me the strength to accept what happened, heal quicker and move on with my life. Sound is vibrations; it’s an energy that can have a profound effect on our mind, body and spirit. The amazing thing about sound healing these days is that you can actually measure the frequency of each organ and feeling, and use them to directly work on clients’ issues, including health issues,” she says. Karl Merc, a sound designer and music composer based in Germany, agrees: “Sound healing can help tune you into greater health,” he says, explaining that, “just like mantras that are chanted over and over again, they can help tune a person into higher vibrational frequencies. At the fundamental level, quantum physics and other [recent] scientific discoveries have determined that everything is vibratory—in a state of constant change—therefore

Using music in therapy is a field with *potentially limitless gains* for our mental health/



Making sweet music is also good for improving your motor skills

the essence of all that is may already be some form of ‘sound’ that we do not yet understand.”

EMOTION F.M.

In the pursuit of happiness, music can be an indispensable tool. Scientists at the University of Missouri found that people were able to use it to elevate their mood, boosting their overall happiness level within just two weeks, while other recent studies suggest that it can also be used

cathartically. When we’re frustrated or annoyed by an interpersonal violation, such as someone standing you up on a date or cutting you off in traffic, many of us prefer reaching for angry music to help us vent out our feelings, while people going through break-ups or suffering from relationship problems prefer music that reflects their negative mood. Channelling your emotions through music can be therapeutic, but once you feel abated, it’s probably



wise to switch to more positive tunes—be they lively or not—so you don't wind up locked in with your negative emotions.

Using music to deliberately manipulate and regulate our emotions is a technique that could be put to great use in the field of mental health. "This is an underexplored field that has potential therapeutic use in the management of disorders that affects these specific areas in the brain and their repercussion on our mental health," says Wissam. Studies have

found that listening to the right kind of music or sounds can help ease our pain, improve sleep quality, reduce stress, improve cognitive performance, relieve some symptoms of depression and even help us eat less. Research has found that playing soft music during a meal can help you eat more slowly and focus on what you're consuming, thereby eating less and feeling more satiated by what you do eat. In the workplace, research from the University of Miami

found that listening to music could help people complete tasks more creatively and quickly, thanks to its mood-elevating and motivational effects. According to Dr. Amit Sood, a Professor of Medicine with the Mayo Clinic, just 15 to 30 minutes of listening to music can help us regain concentration when we're feeling frazzled, with ambient music or songs without lyrics working best.

For many athletes, music can be an essential part of their

training. A study dating back to 1911 found that cyclists pedaled faster while a band was playing than when it was silent, while the tempo of a song can further stimulate us to work out faster and harder. This rhythm response—the way our bodies translate music into movement—can even help us keep up a steadier pace and expend less energy while we exercise. In one study by researchers at Sheffield Hallam University, participants who cycled in time to music were

Today's playlist? "Skate like a pro, baby!"



found to need 7 percent less oxygen to produce the same work as those not synchronising their movements to background music. In addition to acting like a sort of metronome for our bodies, music can also serve as a distraction from pain, helping us push through challenges with more vigour. As physical fatigue begins to take its toll and our brains decide they need a break, music can flirt with our brain's conscious attention, tricking us into thinking that we're taking a bit of a breather when in fact, our bodies are continuing to work hard. When your brain wisens up to this, music has another trick up its sleeve: even when your body is so tired that it can no longer be distracted from its physical exertion, the mood-elevating power of a song can kick in, helping you ride it out for that last extra mile.

PLAY IT SMART

So how can we use music to manipulate ourselves into

performing better and feeling happier? First, find out what type elevates your mood the most. Expert analyses have found that most of us have an innate preference for songs with 120 beats per minute—or two beats per second—whether your preferred genre is house music, hip hop or pop. When working out, pushing this up to about 145 beats per minute can help to pump us up—generally speaking, trying to match the beats per music to your desired heart rate will help keep you in sync for your desired mood. If you're looking to chill out, slower tunes with about 60 to 80 beats per minute can help you calm down. If you play an instrument, you can kick your therapy up a notch: "Recent evidence suggests that playing melodies either with the hand on a piano, or with the arm on electronic drum pads that emit piano tones, helps stroke patients to train fine as well as gross motor skills with regard to speed, precision and smoothness of movements," says Wissam. Even while you

sleep, ambient and white noise can have an effect on our sleep quality and body rhythms: "I highly recommend using some kind of relaxing music during the night," Karl says, adding: "It's the easiest way to use sound healing effectively. While you are asleep, you may not realise it but the sound of traffic and air conditioning are always [present]. I mask those with a programme that assists in deeper sleep, healing, balancing, tuning or other such functions that are highly beneficial over time. This way, I wake up recharged, fresh and ready to face any challenges."

Next time you're putting new music onto your iPod, rather than simply grouping tracks by artist or album, try putting together playlists based on your mood. If you're a little lost on where to start, there are a number of websites out there that can help get you started, such as Stereomood.com, Moodstream.com and Musicoverly.com. Creating the soundtrack to your life could be a lot closer than you think. ■

TOP TUNE-INS

Looking for some new tunes to boost your next sweat session, or to help lull you into a state of zen? Here are some of our top picks:

PUMP IT UP
Come Get It Bae
Pharell Williams

Police On My Back
Lethal Bizzle

Run On Love Lucas Nord
featuring Tove Lo

Yeah Yeah Bodyrox

If I Go (Billion Mix) Ella Eyre

Gecko (Overdrive) Oliver
Heldens x Becky Hill

Best Be Believing (Shadow Child Remix) AlunaGeorge

I Got U Duke Dumont
featuring Jack Jones

Thinking About You Calvin
Harris featuring Ayah Marar

Get Shaky The Ian Carey
Project

Waiting All Night
Rudimental feat. Ella Eyre

Strings Of Life Soul Central

Should Be Sonny Fodera
featuring Natalie Conway

Good Kisser (Jescow Kizomba Remix) Usher

One More Day Example

COOL IT DOWN
Northern Lights Lux

Pretend Tinashe featuring
A\$AP Rocky

Habits (Stay High) - Hippiie Sabotage Remix Tove Lo

Waves Mr Probz

Crazy (TEEMID & Joie Tan Cover) Gnarls Barkley

Paradise Circus Massive
Attack

Baby Koop ft. Cecilia Stalin

Garota de Ipanema João
Gilberto & Stan Getz

[Re-Jazz] Gabrielle
featuring Alice Russell

Only Flaw Wayward

Until We Bleed Kleeup

Kiss The Sky Shawn Lee's
Ping Pong Orchestra