

Noise doesn't just affect hearing, noise activists say. A study by the University of Michigan showed an association with cardiovascular disease and heart attacks, according to Neitzel, who conducted the study. "The consensus is that if we can keep noise below 70 decibels on average, that would eliminate hearing loss," Neitzel said. "But the problem is that if noise is more than 50 decibels, there's an increased risk of heart attack and hypertension," he said. "Noise at 70 decibels is not safe." According to the Earth Journalism Network, when you hear a jackhammer, that's 130 decibels of noise; a chain saw, 110. At a rock concert standing near the speakers? 120. Getting passed by police with sirens blazing? 120. Behind a garbage truck? 100. At a noisy restaurant? 70.

A few states and cities are beginning to do something - at least a little something - to quiet things down. In Texas, new "quiet concrete" is being tested on two stretches of highway. The \$12.4 million project is aimed at replacing concrete sound barriers that won't be needed because highway traffic will be quieter. "Most of the roaring noise from highways comes from the tires on the road, not the engine or exhaust noise," said Robert Bernhard, vice president for research at the University of Notre Dame and an expert in noise-control engineering.

Traditional concrete is raked with grooves that run across the road to drain water, he said. Quieter concrete has grooves that go with traffic and drops highway sound levels by 5.8 decibels, on average, a study in Texas found. That is equivalent to a roughly 70 percent reduction in traffic, according to Emily Black, spokeswoman for the Texas Department of Transportation. In Phoenix, more than 200 miles of highway have been resurfaced with a concrete mix that uses pieces of old tires to dampen sound, said Doug Nintzel, spokesman for the Arizona Department of Transportation. More than 6,000 recycled tires are used in every mile of rubberised four-lane highway. "It means millions of tires have been recycled and kept out of landfills," he said.

Elkhart backs up its regulations against "loud and raucous sounds" with stiff fines, particularly for hot rods and tricked-out motorcycles whose exhaust systems have been manipulated to make them louder. The first violation will cost you \$250; the second one, \$500; the third, \$1,000; and it's \$1,500 for each violation after that. "These biker gangs that roar through town can get up to 125 decibels," Vite said. The city has collected \$1.6 million from noise fines and used it to buy four new police cars and other things, he said. Leaf blowers are another noise flash point. Hundreds of cities have regulations against the tools, but they are difficult to enforce.

Washington, New York and Los Angeles also have struggled with helicopter noise. In Washington, military flights are to blame; in New York, it's sightseeing flights; and in Los Angeles, it is film makers trying to get the perfect shot. About three-quarters of the roughly 145 daily helicopter flights in the D.C. area are to or from the Pentagon, according to a letter from local congressional representatives. The Pentagon has agreed to study the noise and ways to minimize it.

Tomorrow's Cities: How Barcelona shushed noise-makers with sensors

By Jane Wakefield, technology reporter

In the heart of the bustling city of Barcelona is a square that at first sight seems like an oasis of calm. The Plaza del Sol, as the name suggests, is a suntrap and the perfect place to while away a few hours.

The problem is that the square is just too popular and for many of the city's young inhabitants has become the number one venue to meet friends and hang out until the small hours. One resident said it was like living in a permanent party. Even the shops around the square reflect its reputation for late-night carousing, selling beer, pizza and little else. The situation had become unbearable for those with apartments around the square, who have lived with unacceptable noise levels for the past 20 years.

Step in Barcelona's fabrication laboratory, one of a network of 1,200 workshops around the world that allow people to test out new designs and ideas, and build products and new technology using a range of cutting-edge tools. Labs share their designs online so that something built in Boston can be replicated in a lab in Shenzhen. With the help of some EU money, the lab built low-cost, easy-to-use sensors that can detect air pollution, noise levels, humidity and temperature. "This was not only about being part of a scientific project but about enabling political action," said Tomas Diez, who runs the lab.

Families placed the sensors on their balconies and were able to demonstrate that night-time noise levels - with peaks of 100 decibels - were far higher than World Health Organization recommendations. Armed with this information, the residents went to the city council, pressing them to rethink the use of the plaza. Police now move people on at 23:00. Rubbish lorries, which had previously cleared up when the partygoers left in the early hours, have been rescheduled for the morning, and steps that provided seating for gatherers have now been filled with plant boxes. "Now the square is not just for people who want to party at night," said Mr Diez.

<http://www.bbc.com/news/technology-41015486>

Quiet dentist in Vancouver

Dr. Susan Gemeinhardt Inc., 303 - 1770 West 7th Ave. (at Burrard St.), Tel.:604 733 6721; **no TV or sound-sprinkler!!**

Singing road strikes wrong chord with Dutch villagers

AMSTERDAM (Reuters) - Take the highway past the Dutch village of Jelsum and the road will play you a tune. Created by strategically laid "rumble strips" as a way of livening up journeys across the flat landscape, the novelty has worn thin for locals who say the constant droning melody is driving them mad. The tune is created when car tires drive over the strips - which are usually deployed at the side of major roads to warn drivers they are straying off course.

If hit at the correct speed - the 60 kph (40 mph) limit - the road will sing out the anthem of the Friesland region - a northern part of the Netherlands that has a distinct language and culture. But it is loud and the sound travels, and locals say the musical road had created a never-ending cacophony that keeps them awake at night. "Last Saturday night the taxis were driving from Leeuwarden to Stiens and on the way back, they tried to go across the lines as quickly as possible and we had the anthem played all night at high speed," said local resident Ria Jansma.

The Friesland authority has agreed to remove the rumble strips later this week, local newspaper Leeuwarder Courant reported. A Friesland spokesman told BBC News the installation and removal of the strips cost 80,000Euros.

<http://www.bbc.com/news/world-europe-43725796>

Vancouver portable energy company turns gaze to Hollywood

By: Wanyee Li, Metro (excerpts)

A Vancouver company is offering an alternative to noisy gas generators by renting out renewable power systems and aims to ride its success with the local film industry into L.A. Entrepreneur Mark Rabin founded Portable Electric when he realized there was no alternative to gas-guzzling generators that people use to power everything from food carts to power washers. Rabin, who studied geology and energy economics, set out to build a solution. "At first people were like, no one can replace a gas generator, this is crazy. And we were like, watch us."

Rabin created a mobile power system, called a voltstack, that stores energy in lithium ion batteries and can draw from various renewable energy sources, including solar, wind, or even pedal power. Unlike gas generators, voltstacks make no noise at all. Then he invited a few potential customers to his workshop in Strathcona to showcase the prototypes. "The first day we opened our doors, people paid us money to rent the prototypes," he said. Portable Electric rents out these mobile units to event organizers and film companies. That was a little over a year ago and the company is growing rapidly. Employees were building several new voltstacks when Metro visited Portable Electric's workshop in Vancouver's Strathcona neighbourhood.

The quiet voltstacks are a natural fit with the film crews' sensitivity about sound on film sets, he said. For instance, Portable Electric recently worked with a production company filming at a nature reserve, where gas generators were not allowed. After finding success renting portable power systems in Hollywood North, Rabin wants to expand his business into L.A. He says he is already in talks with Fox, Sony, ABC Disney, and others. "The time is now to mobilize what we're doing here in Vancouver, the clean tech scene here, and bring those products down to the U.S. market and make a difference there. It's bridging the gap between old world business as usual and new world technology, business as usual."

<http://www.metronews.ca/news/vancouver/2017/06/26/vancouver-portable-energy-company-turns-gaze-to-hollywood.html>

Indifference to dissonance in native Amazonians reveals cultural variation in music perception

Music is present in every culture, but the degree to which it is shaped by biology remains debated. One widely discussed phenomenon is that some combinations of notes are perceived by Westerners as pleasant, or consonant, whereas others are perceived as unpleasant, or dissonant. The contrast between consonance and dissonance is central to Western music, and its origins have fascinated scholars since the ancient Greeks. Aesthetic responses to consonance are commonly assumed by scientists to have biological roots, and thus to be universally present in humans. Ethnomusicologists and composers, in contrast, have argued that consonance is a creation of Western musical culture. The issue has remained unresolved, partly because little is known about the extent of cross-cultural variation in consonance preferences. Here we report experiments with the Tsimane' - a native Amazonian society with minimal exposure to Western culture - and comparison populations in Bolivia and the United States that varied in exposure to Western music. Participants rated the pleasantness of sounds. Despite exhibiting Western-like discrimination abilities and Western-like aesthetic responses to familiar sounds and acoustic roughness, the Tsimane' rated consonant and dissonant chords and vocal harmonies as equally pleasant. By contrast, Bolivian city- and town-dwellers exhibited significant preferences for consonance, albeit to a lesser degree than US residents. The results indicate that consonance preferences can be absent in cultures sufficiently isolated from Western music, and are thus unlikely to reflect innate biases or exposure to harmonic natural sounds. The observed variation in preferences is presumably determined by exposure to musical harmony, suggesting that culture has a dominant role in shaping aesthetic responses to music.

<http://www.nature.com/articles/nature18635>

Scaredy-cat cougars frightened into killing more prey

People aren't just predators to cougars but "super predators" who strike fear in the cats at the top of the food chain. The big cats get so afraid of our sounds that they stop feeding on deer they've killed, an effect that cascades through their food chain. While the sharp teeth and dagger-like claws of cougars scare us, it turns out we scare the massive cats even more. Just the sound of a human voice puts these fraidy-cats off their dinner.

Dr. Liana Zanette is a biology professor at Western University. She and colleagues at Western, working with researchers from the University of California Santa Cruz, went to gauge how the predators respond to played sounds of people talking or frogs chirping, as a control. Videos show cougars, also called mountain lions and pumas, went high-tailing it away from their kills as soon as they heard a human voice. "They perceive us as predators and there are ecological consequences," Zanette said. "They stop feeding."

The researchers found that cougars fed on their deer dinners for half as long after hearing humans than when they hear neutral frog calls. But because they abandoned their kills, they had to go and kill more prey, to ensure they received enough food. "They're feeding less so they have to kill more because people are scaring them off their caches. And we know that responses of middle-of-the-food-chain animals to their predators has effects further along the food chain and that is certainly the case for deer."

The findings reflect just how scary we human "super predators" are to cougar predators, the researchers say. Humans kill carnivores as much as nine times their natural predators do. But people also tolerate large carnivores all over the world, Zanette said. What the fear response means for large carnivores still needs to be sorted out, as people and predators overcome their tension in increasingly human-dominated landscapes.

<http://www.cbc.ca/radio/quirks/scaredy-cat-cougars-frightened-into-killing-more-prey-1.4173967>

Subplate neurons are the first cortical neurons to respond to sensory stimuli

Significance

Sensory experience, even at prenatal periods, can shape brain connectivity. Thus, the emergence of sensory responses is a key step in cortical development. Sensory cortical responses are thought to emerge in cortical layer 4, which is the adult target of thalamic projections. However, in developing animals, thalamic fibers do not target layer 4 but instead target subplate neurons in the white matter. We show that subplate neurons respond to sounds before layer 4 is activated by thalamic axons. Moreover, early local field potential (LFP) responses demonstrate nascent topographic organization. Together we find that sound-evoked cortical activity and topographic organization emerge in a different layer than thought. Since subplate circuits are disrupted in autism spectrum disorder (ASD) models, disrupted emergence of sensory activity could be utilized for diagnosis and intervention.

Abstract

In utero experience, such as maternal speech in humans, can shape later perception, although the underlying cortical substrate is unknown. In adult mammals, ascending thalamocortical projections target layer 4, and the onset of sensory responses in the cortex is thought to be dependent on the onset of thalamocortical transmission to layer 4 as well as the ear and eye opening. In developing animals, thalamic fibers do not target layer 4 but instead target subplate neurons deep in the developing white matter. We investigated if subplate neurons respond to sensory stimuli. Using electrophysiological recordings in young ferrets, we show that auditory cortex neurons respond to sound at very young ages, even before the opening of the ears. Single unit recordings showed that auditory responses emerged first in cortical subplate neurons. Subsequently, responses appeared in the future thalamocortical input layer 4, and sound-evoked spike latencies were longer in layer 4 than in subplate, consistent with the known relay of thalamic information to layer 4 by subplate neurons. Electrode array recordings show that early auditory responses demonstrate a nascent topographic organization, suggesting that topographic maps emerge before the onset of spiking responses in layer 4. Together our results show that sound-evoked activity and topographic organization of the cortex emerge earlier and in a different layer than previously thought. Thus, early sound experience can activate and potentially sculpt subplate circuits before permanent thalamocortical circuits to layer 4 are present, and disruption of this early sensory activity could be utilized for early diagnosis of developmental disorders.

<http://www.pnas.org/content/114/47/12602.abstract>

<http://neurosciencenews.com/auditory-neurons-asd-8143>

World Hearing Day 2019

On March 3rd, 2019, WHO will launch a free app that allows people to check their hearing. The HearWHO app will be used to: *raise awareness about the importance of hearing; encourage people to check their hearing regularly and practice safe listening; allow health workers to check the hearing status of people in their communities.* More information on the campaign will be available on the WHO webpage www.who.int/world-hearing-day. Information materials including a brochure on the theme, posters, banners, infographic, ppt. etc. will be made available on this webpage in early February.