

'Natural' sounds improves mood and productivity, study finds

May 19 2015

Playing natural sounds such as flowing water in offices could boost worker moods and improve cognitive abilities in addition to providing speech privacy, according to a new study from researchers at Rensselaer Polytechnic Institute. They will present the results of their experiment at the 169th Meeting of the Acoustical Society of America, held May 18-22, 2015 in Pittsburgh.

An increasing number of modern open-plan offices employ sound masking systems that raise the background sound of a room so that speech is rendered unintelligible beyond a certain distance and distractions are less annoying.

"If you're close to someone, you can understand them. But once you move farther away, their speech is obscured by the masking signal," said Jonas Braasch, an acoustician and musicologist at the Rensselaer Polytechnic Institute in New York.

Sound masking systems are custom designed for each office space by consultants and are typically installed as speaker arrays discretely tucked away in the ceiling. For the past 40 years, the standard masking signal employed is random, steady-state electronic noise—also known as "white noise."

Braasch and his team are currently testing whether masking signals inspired by natural sounds might work just as well, or better, than the conventional signal. The idea was inspired by previous work by Braasch

and his graduate student Mikhail Volf, which showed that people's ability to regain focus improved when they were exposed to natural sounds versus silence or machine-based sounds.

Recently, Braasch and his graduate student Alana DeLoach built upon those results to start a new experiment. In this ongoing work, they expose 12 human participants to three different sound stimuli while performing a task that requires them to pay close attention: typical office noises with the conventional random electronic signal; an office soundscape with a "natural" masker; and an office soundscape with no masker. The test subjects only encounter one of the three stimuli per visit.

The natural sound used in the experiment was designed to mimic the sound of flowing water in a mountain stream. "The mountain stream sound possessed enough randomness that it did not become a distraction," DeLoach said. "This is a key attribute of a successful masking signal."

At large, they want to find out if workers who are listening to natural sounds are more productive and overall in better moods than the workers exposed to traditional masking signals.

Braasch said using [natural sounds](#) as a masking signal could have benefits beyond the office environment. "You could use it to improve the moods of hospital patients who are stuck in their rooms for days or weeks on end," Braasch said.

For those who might be wary of employers using sounds to influence their moods, Braasch argued that using natural masking sounds is no different from a company that wants to construct a new building near the coast so that its workers can be exposed to the soothing influence of ocean surf.

"Everyone would say that's a great employer," Braasch said. "We're just using sonic means to achieve that same effect."

More information: Presentation #2pNSa3, "Tuning the cognitive environment: Sound masking with 'natural' sounds in open-plan offices," by Alana G. DeLoach, Jeff P. Carter and Jonas Braasch will take place on Tuesday, May 19, 2015, at 2:10 PM in Kings. The abstract can be found by searching for the presentation number here:

asa2015spring.abstractcentral.com/planner.jsp

Provided by Acoustical Society of America

Citation: 'Natural' sounds improves mood and productivity, study finds (2015, May 19) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-05-natural-mood-productivity.html>

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