Are Nature's Sounds Calming? Study's Claim Sounds Distorted

By Erik Lief — April 4, 2017

When you listen to the tranquil sounds of nature and the great outdoors, you feel more relaxed.

Most people would likely take that statement to be true, mostly because it's both plausible and intuitive. And maybe it is factually true. But can it be proven scientifically?

That was the mission undertaken by some British researchers, who sought to determine whether naturalistic sounds could benefit health and mitigate or relieve stress from our daily lives. And yet, while this group from Brighton and Sussex Medical School ultimately determined that natural sounds were, in fact, restorative, the case they make to prove their conclusion produces more static than serenity.

While the name of the study – "Mind-wandering and alterations to default mode network connectivity when listening to naturalistic versus artificial sounds" – provides no conclusive statement and leaves the reader somewhat adrift, the accompanying news release seeking to publicize its findings does the opposite. It clearly stakes its claim with this headline: "It's true -- the sound of nature helps us relax."

That's pretty straightforward, so let's see how the research team backs that up.

First, the study's objective.

"A primary focus of research in this area relates to the ‘restorative’ effects of naturalistic stimuli, and assessing the ability of nature exposure to promote recovery from physiological or psychological stress," writes the authors of the study, which was published last week in the
That ultimately led to this conclusion: "We are all familiar with the feeling of relaxation and 'switching-off' which comes from a walk in the countryside, and now we have evidence from the brain and the body which helps us understand this effect," said Dr. Cassandra Gould van Praag, the lead author.

While the subjects listened to four types of recorded "soundscapes," researchers compiled physiological data, tracking changes in brain reaction using an MRI scanner, while also using a heart monitoring device to measure cardiac activity, or "arousal."

The recordings, as stated in the study, were described as "(1) artificial familiar; (2) artificial unfamiliar; (3) naturalistic familiar; (4) naturalistic unfamiliar; (5) no-soundscapes (control). Each soundscape lasted 5?minutes 25?seconds."

Without going into the complexity of the testing procedures – which you can read here [3], if interested – researchers determined that when the subjects were exposed to natural and artificial sounds, the naturalistic soundscapes produced the most calming results while the artificial sounds "reflected an inward-directed focus of attention, similar to states observed in anxiety, post-traumatic stress disorder and depression."

But here's the problem (and the first of many): The study consisted of just 17 people – and worse, all of the subjects were very close in age.

The participants' ages ranged from 21 to 34, with the median being 26. And among the already troublingly-small cohort, the authors state, "Heart rate data was not available for two participants
due to weak pulse oximetry signal," or oxygen saturation of the blood.

What's more, some data was collected by subjective means (we've italicized the reference below), while other data was potentially distorted since it was not collected, but delivered by the subjects themselves.

"[P]articipants provided feedback on their subjective experience during the attentional monitoring task and associated soundscape," the study states. "Participants rated the pleasantness and intensity of the soundscape, their level of distraction attributed to the soundscape and their thoughts, their level of rumination and the degree to which they felt focused on the attentional task."

As for the possible data distortion, the authors wrote that "[t]hese effects may be amplified in individuals experiencing high levels of self-reported cognitive exhaustion." Hmm.

Finally, the paper included this admission, which also undercut its findings: "A limitation in this study, however, is the lack of behavioural or physiological data to support the interpretation of neural findings."

Lack of data. Self-reported experiences and subjective findings. Very small sample size. And narrow age range of participants. Taken together, it's difficult to understand how the lead author can state that "now we have evidence" to make the claim that "nature helps us relax."

While it's likely everyone enjoys the outdoors, a lakeside walk and the tranquility it can provide, this study sounds a bit fishy.