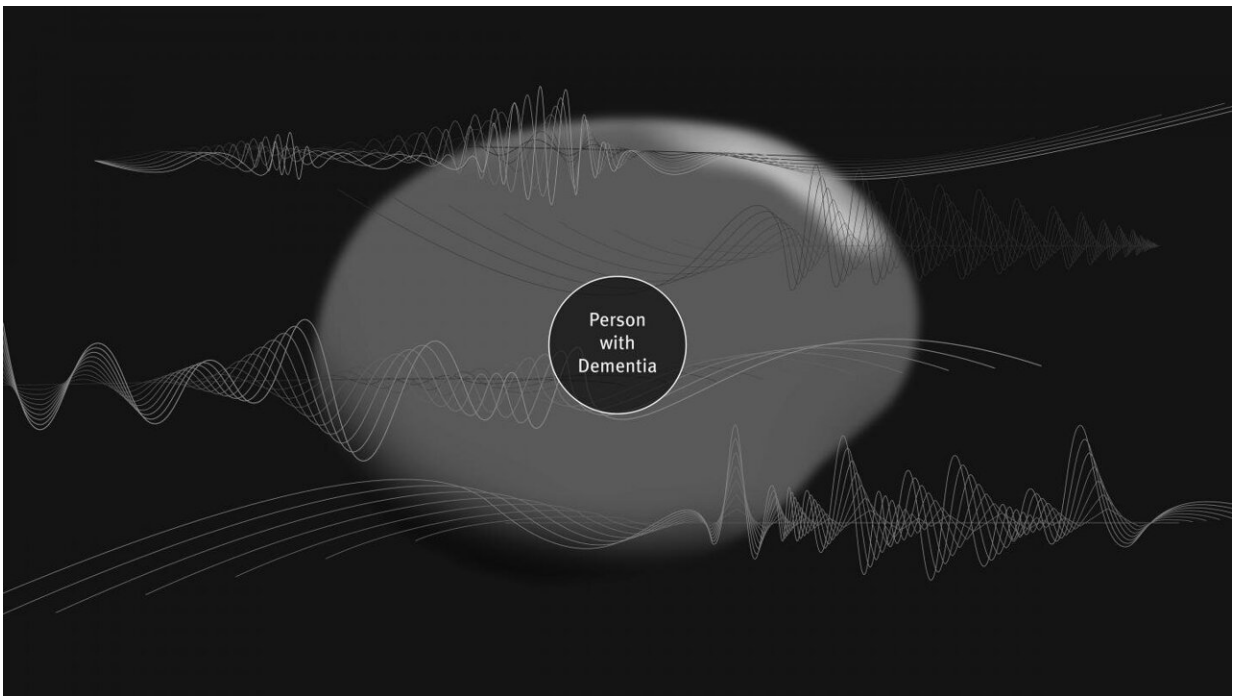


Personalized soundscape could help people with dementia with time, place recognition

June 9 2021



Credit: Arezoo Talebzadeh, Ghent University

Designing a soundscape to improve the quality of life for an individual is centered on putting their perception at the heart of the process. It becomes trickier for people who have diminished cognitive capacities.

During the 180th Meeting of the Acoustical Society of America, which will be held virtually June 8-10, Arezoo Talebzadeh, from Ghent

University, will show how a personalized soundscape can help those with [dementia](#) by providing clues regarding time of day and place. The session, "Soundscape design for people with dementia; the correlation between psychoacoustic parameter and human perception," will take place Wednesday, June 9, at 9:35 a.m. Eastern U.S.

Using a system called AcustiCare, a personalized soundscape is created with a customized algorithm that plays scheduled sounds at specific moments throughout the day. Through feedback, the system can refine the sounds to be played the next day, helping to reinforce time and space for dementia patients.

"The sounds consist of a collection of natural sounds, birdsongs, outdoor sounds, water/rain sounds and kitchen sounds, music, bell sound, and similar," Talebzadeh said. "From these sounds, psychoacoustic parameters and metadata is used to obtain similarity information between the [different sounds](#). This information is used to suggest a new sound related to the feedback findings."

Talebzadeh said his research aims to discover the correlation between psychoacoustic environments and mood change, hoping to trigger responses that elicit feelings of safety. The soundscape could improve the [quality of life](#) of people with dementia by improving sleep quality, reducing agitation, anxiety, and distress and reduce behavioral and psychological symptoms of dementia, the use of psychoactive drugs, and stress on caregivers and staff.

"One of the [environmental factors](#) is the infrastructure of care facilities," Talebzadeh said. "Various modifications are possible to support a dementia-friendly environment that can also contribute to preventing or reducing behavioral and psychological symptoms of dementia. Sound is one of the environmental factors."

More information: Arezoo Talebzadeh et al, Soundscape design for people with dementia; The correlation between psychoacoustic parameter and human perception of safety and mood, *The Journal of the Acoustical Society of America* (2021). [DOI: 10.1121/10.0004548](https://doi.org/10.1121/10.0004548)

Provided by Acoustical Society of America

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