

Exploring The Sounds Of Silence

Science Daily —Silence in music is not really silent. Research by a University of Arkansas music theorist, Elizabeth Hellmuth Margulis, reveals how context affects listeners' experience of silence in music.

“ The same acoustic silence, embedded in two different excerpts, can be perceived dramatically differently,” Margulis wrote in an article in *Music Perception* that explores the transformation from acoustic silence to perceived silence.

Silence offers “ an opportunity to study the active participatory nature of musical engagement,” Margulis wrote. There has been little experimental study of musical silence up to now.

“ Silent periods could provide a unique chance to study the way that past musical events shape expectations about future ones, and the way that underacknowledged, often taken for granted musical elements (such as rests) are actually suffused with the full extent of ‘ musical’ listening,” she wrote.

Silence in music communicates in a similar manner to silence in speaking, Margulis said. Sometimes the duration of the pause indicates the importance of the segment. In written language, a pause at the end of a paragraph is longer than the pause at the end of a sentence. Pauses in language are also used for expressive effect, Margulis explained:

“ For example, I could say ‘ You know what happened?’ Pause. ‘ He called her.’ And that pause in the right context is really tense, and you get everyone leaning forward. Music can do something similar.”

When a listener encounters silence in a musical work, Margulis wrote, “ Impressions of the music that preceded the silence seep into the gap, as do expectations about what may follow.”

Listeners' impressions and expectations can have a powerful effect on how they hear a silence, to the extent that identical acoustical silences may come to “ sound” quite different. For example, Margulis found that musical

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context can cause two silences of the same duration “ to seem like they occupy different lengths of time or carry different amounts of musical tension.”

Margulis’ research involved two experiments, one using musical excerpts from commercially available recordings. The second experiment used simpler musical excerpts produced specifically for the study with carefully measured and controlled silences.

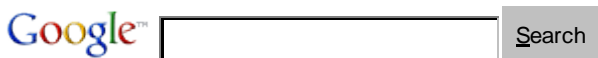
Participants without musical training were selected for both experiments, so that their responses would reflect reactions to the music they were hearing rather than assessments based on formal musical training. They proved to be “ highly sensitive” to the subtleties of silence in its musical context.

“ I’ m interested in showing how listeners without any special training know more than they think they know,” Margulis said, “ You don’ t need courses and lectures to understand music; it’ s meant to naturally speak to you.”

Margulis is an assistant professor of music in the J. William Fulbright College of Arts and Sciences at the University of Arkansas. Her article “ Silences in Music Are Musical Not Silent: An Exploratory Study of Context Effects on the Experience of Musical Pauses” appears in the June 2007 issue of Music Perception.

Note: This story has been adapted from a news release issued by University of Arkansas, Fayetteville.

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