Getting in “the groove” while tapping
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Introduction
People often find it difficult to say what the music they are listening to sounds like or how it fits together. For some, it seems to be related to the quality of the experience, but for others, it is more abstractly described as having a high degree of “groove.” Although many studies have examined the elements that contribute to this experience, very little is understood about the neural mechanisms underlying the perception of groove and how they might distinguish music with high vs. low groove. The present study aimed to explore the relationships among these variables in order to understand the neural mechanisms underlying the perception of groove.

Subjects
Thirty-two students with normal hearing and no history of neurological problems were recruited from a research participant pool. None of the subjects had prior training in music or had participated in a previous musical experiment. The subjects were divided into two age groups: 18 or younger, and 18 or older. The age range of the younger group was 18 to 24 years, and that of the older group was 25 to 30 years.

Stimuli
Properties of the stimulus Disclosure of Groove
A research participant pool was composed of 50 musical compositions from a wide range of genres, including classical, jazz, and rock. The compositions were selected to cover a wide range of tempo, complexity, and groove.

Tasks & Procedure
Participants were seated in a stationary chair 2 m from a computer monitor and two speakers situated at 2 or more years of training on a musical instrument, and of those, 18 by 5 for each group. Data were collected via the straight-backed chair 2 m from a computer monitor and two speakers situated at 2 or more years of training on a musical instrument, and of those, 18 by 5 for each group. Data were collected via

Analyses
We analyzed the tapping data from three different modalities: (1) isochronous tapping, (2) free-form tapping, and (3) resonator tapping. The first modality involved tapping with the hand that was most effective for the subject. The second modality involved tapping with the hand that was the least effective for the subject. The third modality involved tapping with each hand in a clockwise or counterclockwise order. The tapping patterns were analyzed using a combination of time-series analysis and frequency-domain analysis.

Results
The results showed that the subjects' tapping patterns were influenced by the following factors: (1) the type of stimulus, (2) the subject's age, (3) the subject's musical experience, and (4) the subject's mood.

Discussion
We examined the factors that influence the perception of groove in music. We found that the perception of groove is influenced by the tempo, melody, and harmony of the music. The results showed that the subjects who were more experienced in music were more likely to perceive the music as having a high degree of groove. The results also showed that the subjects who were in a good mood were more likely to perceive the music as having a high degree of groove.

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References