

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Effect of Touch-produced Sounds on Surface Texture Perception

Permalink

<https://escholarship.org/uc/item/6x35v368>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 39(0)

Authors

Kwon, Jinhwan

Hata, Suguru

Komoto, Natsumi

et al.

Publication Date

2017

Peer reviewed

Effect of Touch-produced Sounds on Surface Texture Perception

Jinhwan Kwon

Department of Informatics, The University of Electro-Communications

Suguru Hata

Department of Informatics, The University of Electro-Communications

Natsumi Komoto

Department of Informatics, The University of Electro-Communications

Maki Sakamoto

Department of Informatics, The University of Electro-Communications

Abstract: Texture is an important source of information for distinguishing surface properties. We are able to perceive various textural properties of surfaces from tactile or visual inputs. However, it is unclear how touch-produced sounds influence the various surface texture perceptions. In this study, we examined whether the touch sounds produced by different surface textures influence the various surface perceptions. Consequently, the surface textures with high height and wide interval resulted in rough, bumpy, soft and cool perceptions and the surface textures with the low height and narrow interval resulted in smooth, flat, hard and warm perception. Also, there were statistically significant differences in these measures between two surface texture groups. Furthermore, significantly positive correlations were found in “rough – smooth”, “bumpy – flat”, “sticky – slippery”, “wet – dry” and “unpleasant – pleasant” measures between touch-produced sounds and actual touch. This indicates that the touch-produced sounds influence various surface perceptions.