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Art and the latest scientific findings from the neurosciences and psychology

The recent development of cognitive neuroscience has invited inference about the neurosensory events underlying the experience of visual arts involving implied motion. We report functional magnetic resonance imaging (fMRI) study demonstrating activation of the human brain's visual cortex by static images showing implied motion because of instability. We used static line-drawing cartoons of humans by Hokusai Katsushika (called Hokusai Manga), an outstanding Japanese cartoonist as well as famous Ukiyoe artist. We found Hokusai Manga with implied motion by depicting human bodies that are engaged in challenging tonic posture significantly activated the motion-sensitive visual cortex including MT+ in the human extrastriate cortex, while an illustration that does not imply motion, for either humans or objects, did not activate these areas under the same tasks. We conclude that motion-sensitive visual cortex would be a critical region for perception of implied motion in instability. We also report the role of intention on visual art based on the latest scientific findings from the neurosciences and psychology.

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Naoyuki Osaka is a psychologist and currently Professor Emeritus, Kyoto University and a Member of Japan Academy. He has been engaging neuroimaging study of Japanese classical visual art using fMRI (functional magnetic resonance imaging). He got Ph.D. in experimental psychology at Graduate School of Letters, Kyoto University in 1979 and appointed as Assistant Prof. & Associate Prof. of Psychology, Otomon-Gakuin University (1977-1987), then appointed as Associate Prof. & Prof. of Psychology, Kyoto University (1987-2010). He appointed Dean, Graduate School of Letters, Presidents of Color Science Society of Japan and Working Memory Society of Japan, also served as a member of Science Council of Japan and Chairperson, Brain & Consciousness Committee and Program Officer, JSPS. Specialties are brain imaging study of social brain, working memory and experimental aesthetics which has established by German scientist G.T.Fechner in 1878.