

Title	脳の活動部位による分類を用いた複数動画同時視聴手段に関する研究
Author(s)	古谷, 亘
Citation	
Issue Date	2013-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/11280
Rights	
Description	Supervisor:西本一志, 知識科学研究科, 修士

A Method for Concurrent Watch of Multiple Video Contents Using Their Classifications Based on Active Areas of Brain

Wataru Furuya

School of Knowledge Science,
Japan Advanced Institute of Science and Technology
March 2013

Keywords: multiple viewing, brain activity, NIRS

This paper is intended to clarify the relationship between the degree of understanding and the combination of the multiple viewing of the video by measuring the brain activity when you watch a single or multiple various video content(s). Although many studies have been made on efficient understanding of video contents, there are not so many papers that refer to changes in the level of understanding of the contents in a concurrent viewing. Therefore, we measured brain activity when you view various video contents using NIRS and we examine the possibility of concurrent viewing of multiple video contents from the viewpoint of relationship between the contents and brain activity.

The fixing point of NIRS in this research did as follows from correspondence with the brain function. The frontal lobe rules the idea, the judgment, and understanding, and the temporal lobe is assumed to rule the knowledge memory besides aural and the understanding of the language. It was thought that these two parts were important when complex information was processed by the brain though video was a compound thing of various stimulation, and NIRS was installed, and measured from the frontal lobe to the temporal lobe in this research.

At the first experiment. I researched that work efficiency when examinees doing

works during listening music (Japanese pops or American pops). Consequently, there is a differences on right temporal lobe in comparison with a no sound, Japanese pops with American pops.

In the second experiment, the correlation examined the brain activity at attention whether of examination, video the genre and the brain activity of TV show. Consequently, the brain activity at the video attention was able to be classified into some patterns. The difference of the brain activity by each program was larger than that of the genre, and the correlation by the video genre and the brain activity was not seen.

In the third experiment, whether simultaneous attention of two or more videos was possible was examined. This is a main purpose of this research. The combination of video was based on the brain activity in single attention. Moreover, to clarify video of which right and left strongly influenced the brain while experimenting, the gaze degree to right and left video was measured with a glance measurement machine. As a result of the experiment, in video with a different brain activity part though it became a result that obstructs an activity each other. In the video of a similar activity part, the activation of the part that had not acted at single attention was seen.

In the entire this research. It was suggested that it be possible to classify various videos according to the feature in the brain activity. However, activation by simultaneous attention did not happen though the one with a different activity part was assumed to activate the entire attention at the same time mutually in the expectation at first. In this experiment, simultaneous attention was suggested that some tendencies appear by the combination. The kind and the genre of video were few, and the combination of video in simultaneous attention and the relation to the brain activity were not able to be clarified by this research. However, it is thought that there is a possibility that simultaneous attention of video can be done by advancing this research in the future enough.