

CREATE

When people are happy, they can find things faster

Everyday changes of mood were found to affect the performance of visual search

A wide range of social psychology studies support the premise that people are more creative when they are happy, and are more sociable when they are able to engage with many things and people. However, the effect of mood on people's ability to perform basic tasks such as noticing or finding things has not been clarified.

A team led by Noriko Yamagishi, a senior researcher at the CiNet Brain Networks and Communication Laboratory, has developed a smartphone app to record variations in people's level of happiness during their everyday lives, and by having them perform visual search tasks at the same time, it was

revealed that a person's level of happiness affects their speed in visual search task (Fig.1).

"A person's degree of happiness is not a constant attribute like personality."

Thirty-three research participants worked on tasks for about 5 minutes each time three times a day (morning, noon, and night) for two weeks (Fig.2). The results showed that a person's de-

gree of happiness is not a constant attribute like personality, but changes from one moment to the next. When a person's happiness level is higher, he/she can locate more quickly a target object set among obstacles.

According to Dr. Yamagishi, "The results of this study suggest that it is possible to estimate how happy someone is by using a smartphone app to monitor their performance in visual search tasks. This could lead to the development of methods for visualizing the early stages of mental disorders such as depression."

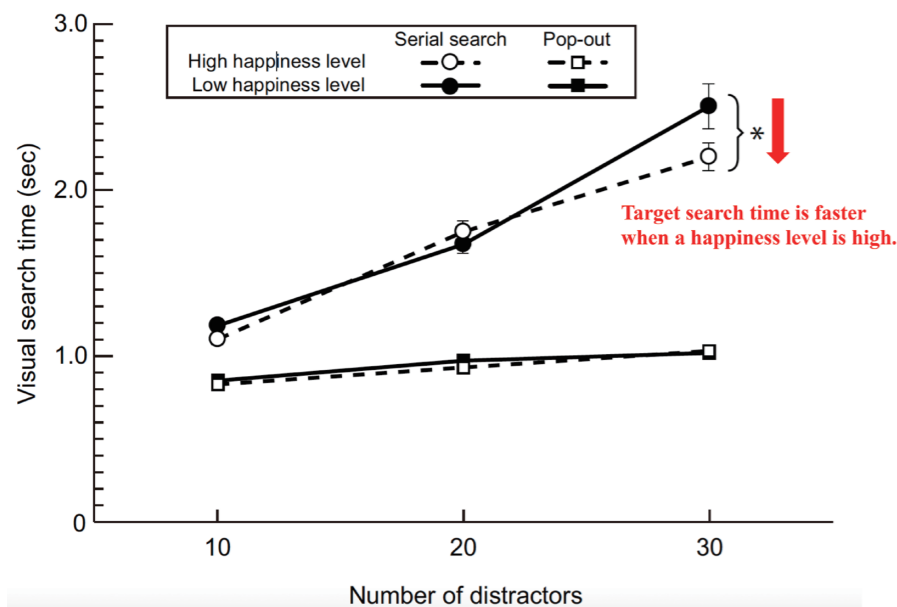
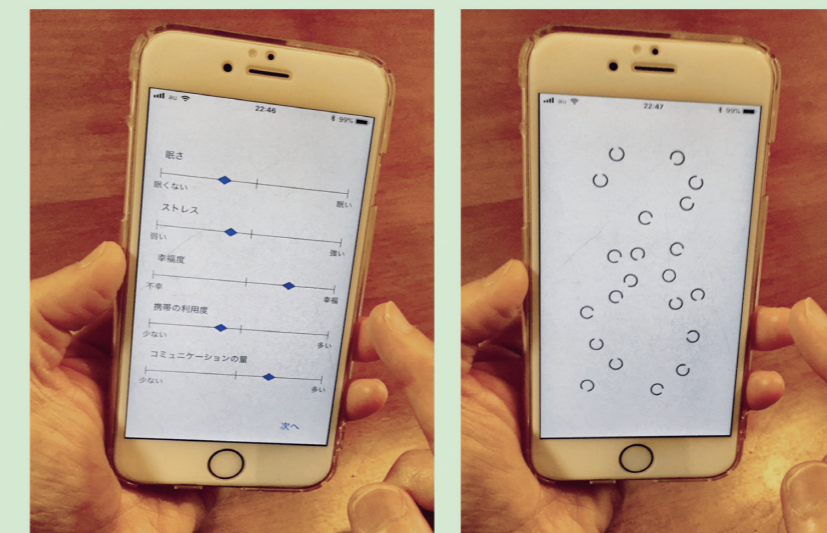


Fig.1 : Effect of happiness level on visual search times

Reference
PLOS ONE
 URL: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0195865>
 DOI: 10.1371/journal.pone.0195865
 The effect of mood state on visual search times for detecting a target in noise:
 An application of smartphone technology
 Maekawa, T., Anderson, S. J., de Brecht, M., Yamagishi, N.

Collaboration Research Members
 NICT : Toru Maekawa Matthew de Brecht
 Noriko Yamagishi
 Aston University(<http://www.aston.ac.uk/>) : Stephen J. Anderson

An application of smartphone technology to collect visual search data (right) and emotional status (left) in everyday life



Recoding emotional status

Recoding visual search time to find a target in noise (distractors)

Fig.2 : Smartphone application to collect emotional status and visual performance in everyday life

A happiness level dynamically changes in everyday life.

Visual search times were significantly faster for high happiness levels than for low happiness levels.

The result indicates that emotional status could be estimated by measuring visual search times using a smartphone application.

CONNECT

Uninterrupted communication for users moving at 500km/h

Proof of concept demonstration of high-capacity seamless communication for high-speed railways

The demands for high-speed and smooth communications are rapidly increasing, including from users who are on rapidly moving vehicles such as high-speed trains, because of the explosive popularization of smartphones and other personal multimedia devices. In current cellular networks, however, con-

nections to Internet networks during high-speed movement are frequently interrupted because of radio station switching (handover).

NICT Network System Research Institute (NSRI) researchers performed a proof-of-concept demonstration of an uninterrupted communication system for high-speed trains by combining a

linear cell network configuration, a high-speed seamless fiber-wireless system in the millimeter-wave (mmWave) band, and an ultra-fast optical-path switching technique. This work was conducted as part of a project titled "Research and development of millimeter-wave backhaul technology for high-speed vehicles" funded by