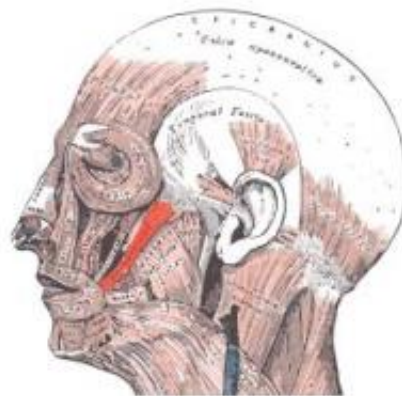


Study uses grins and frowns to predict online game hits

February 11 2013, by Nancy Owano



(a) Corrugator supercilli muscle



(b) Zygomaticus major muscle

Common facial muscle groups used for emotion measurements. Credit: Wikipedia

(Phys.org)—Up to now, game publishers have sought to find out if they have the Next Hot Game in the wings through interviews with focus-group gamers. However, researchers in Taiwan believe they have a better way, and they reported their findings at IEEE/ACM NetGames in November last year. Their study, "Forecasting Online Game Addictiveness," is inspired by the fact that game developers and publishers could use a better guide than focus group interviews and hunches, given the numbers of games that never achieve wild success.

"Online gaming has now become an extremely competitive business," they wrote in their paper. "As there are so many game titles released every month, gamers have become more difficult to please and fickle in their allegiances." The study authors set out to show that faces deliver the real clues as to how popular games will be.

The team, including those from [electrical engineering](#) as well as information-science disciplines, devised a way to predict an online game's success by studying gamers' initial [emotional response](#). Their testing analyzed the movements of gamers' smile and frown muscles in the first 45 minutes of play.

Taipei-based coauthor, Sheng-Wei Chen, also known as Kuan-Ta Chen, associate research fellow at the Institute of Information Science, Academia Sinica, said that the cost of developing a game can be as high as \$200 million. That is a fine investment for a global sensation that triggers gamer loyalty over time, but a serious loss if the game is a dud. Chen said that most games are not global sensations; they survive four to nine months. Their model is said to forecast a game's addictiveness according to facial electromyography (EMG) measures from a focus group.

How they proceeded: (1) They used archival game data and numerous EMG experiments for a forecasting model that could predict a game's ability to retain active players for a long time; (2) They analyzed account activity records of 11 games—five role-playing games, four action games, and two first-person shooter games; (3) They produced a general addictiveness index; (4) In the lab, they gathered 155 hours of facial-expression data. They connected electrodes to 84 gamers, ages 19 to 34. The electrodes measured electrical potentials generated by two facial muscles—the corrugator supercilii, "frowning" muscle, and the zygomaticus major muscle, in smiling and laughing. These measurements were conducted for 45 minutes. The subjects were

exploring the games for the first time. Each player had to play as many as three new games. The researchers were able to predict the games' addictiveness index to within an average of 11 percent, said Chen. Nicky Yeh, marketing manager of the Taiwan branch of Hong Kong–based Gameone Group, is quoted in *IEEE Spectrum* as saying that the 11 percent error sounded acceptable.

Their goal is to help [game publishers](#) avoid wasting lots of money in bad investments and to proceed full steam ahead with games that are likely to succeed. The study's findings, said the authors, could be beneficial for game development firms to ensure their designs are on the right track early on, and for [game](#) operators before publishing the games.

Chen's team intends to continue their research. They hope to build more sophisticated models by collecting other response data, such as heartbeat and galvanic skin response.

Those supporting their research included Gamania Digital Entertainment. and Taiwan's National Science Council.

More information: [mmnet.iis.sinica.edu.tw/pub/lo ...
12_addictiveness.pdf](http://mmnet.iis.sinica.edu.tw/pub/lo...12_addictiveness.pdf)
[spectrum.ieee.org/consumer-ele ... ess-of-online-games/](http://spectrum.ieee.org/consumer-ele...ess-of-online-games/)

© 2013 Phys.org

Citation: Study uses grins and frowns to predict online game hits (2013, February 11) retrieved 2 May 2024 from <https://phys.org/news/2013-02-frowns-online-game.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.