Breakout for Two

an exertion interface for sports over a distance

Florian 'Floyd' Mueller, Stefan Agamanolis

Traditional sports foster bonding and team spirit through the sharing of a physically taxing competitive activity. This project aims to build the same sense of community over a distance, not with email and instant messengers, but with real balls, sweat, and exertion.

Breakout for Two employs an *exertion interface* — an interface that deliberately requires intense physical effort and can be expected to be physically exhausting when used for an extended period of time. In short, it gets your adrenaline moving and makes you sweat, just like any physical exercise or sport.

The Breakout for Two game is a cross between soccer, tennis, and the popular video game *Breakout*. Participants in remote locations must throw or kick a real soccer ball at a local physical wall to break through a projection of virtual "blocks" that partially obscure a live video image of the other player. The effect is one of a virtual game "court" in which the competitors are separated by a barrier through which they can interact.

The blocks on each player's screen are synchronized — when one player breaks through a block, the same block disappears from the other player's screen. The player who breaks through the most blocks wins. Games typically last several minutes and can incorporate varying levels of difficulty.

Our hypothesis is that augmenting an online sport or gaming environment with exertion will greatly enhance the potential for social bonding, just as playing an exhausting game of squash or tennis with a new acquaintance or co-worker helps to "break the ice" and build friendships. The heightened state of arousal induced by the exertion also potentially makes the interaction more memorable.

We conducted a study to test these hypotheses and evaluate the effects of exertion interfaces, with encouraging results. Players in Breakout for Two said they got to know each other better, became better friends, felt the other player was more talkative, and were happier with the transmitted audio and video quality in comparison to a control group playing an analogous game using a traditional non-exertion keyboard interface.

A potential future application is a sort of virtual athletic facility or "country club" that consists of several exertion environments for engaging in sports at a distance.

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