Bubble Popper: The Body Contact Experience

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ABSTRACT
Although some of today's popular exertion games support social experiences, they rarely consider or support body contact. We believe this limits opportunities to design engaging exertion games. To explore this opportunity, we present Bubble Popper, an exertion game that considers and facilitates body contact with simple technology. Through reflecting on our design and analyzing observations of play we are able to articulate what impact physical space layout in relation to digital game elements, and physical disparity between input and digital display, can have on body contact. Our results aid game designers in creating engaging exertion experiences by guiding them when considering body contact, ultimately helping players benefiting from more engaging exertion games.

Author Keywords
Exertion games; exertion interfaces; exergames; movement-based interaction; body contact; sports; game design.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms
Human Factors; Design.

BUBBLE POPPER: THE EXPERIENCE

Exertion games require players to invest physical effort [1]. Today the most well known commercial systems that allow for such interactions are Nintendo's Wii, Microsoft's Kinect and Sony's PlayStation Move. Although some of the games on these systems enable social experiences, these experiences mostly require players to stand side-by-side, where they do not experience, and are not expected to engage in body contact. We take inspiration from rich body contact experiences ranging from the playful Twister to team sports such as basketball, where players push and block one another to gain an advantage in the game.

Figure 1. Two players competing in Bubble Popper. The player on the right uses his arm to block the opponent.

Bubble Popper (Figure 1), which emerged from teachings on Exertion Games [1], is a 2-player exertion game projected onto a flat vertical surface. Players are assigned a color, yellow or pink, and must pop their colored bubbles by hitting the bubbles on the projected surface with an augmented glove. The rules of the game are simple; the player who pops the most bubbles within 60 seconds wins.

We encourage body contact through game design and adequate physical space and size. To facilitate body contact we made sure the bubbles were moving around the digital projection space and bouncing off each other. This not only supported players to move around, but also afforded colliding with the opponent and their path. In this situation players have to choose between moving out of the way and letting their opponent score a point, or blocking their path to prevent their opponent from scoring while also giving themselves an opportunity to score a point.

In our demonstration, we require a projector to display our game. The projection surface needs to be a sturdy wall that can withstand rough hits. We will bring the laptop running the game as well as the gloves and sensors.

Our results aid game designers in creating engaging exertion experiences by guiding them when considering body contact, ultimately helping players benefiting from more engaging exertion games.

REFERENCES

1. Mueller, F., Edge, D., Vetere, F., Gibbs, M.R., Agamanolis, S., Bongers, B. and Sheridan, J.G. Designing Sports: A Framework for Exertion Games. In Proc. of the ACM annual conference on Human Factors in Computing Systems (CHI '11), ACM Press, Vancouver, Canada, 2651-2660