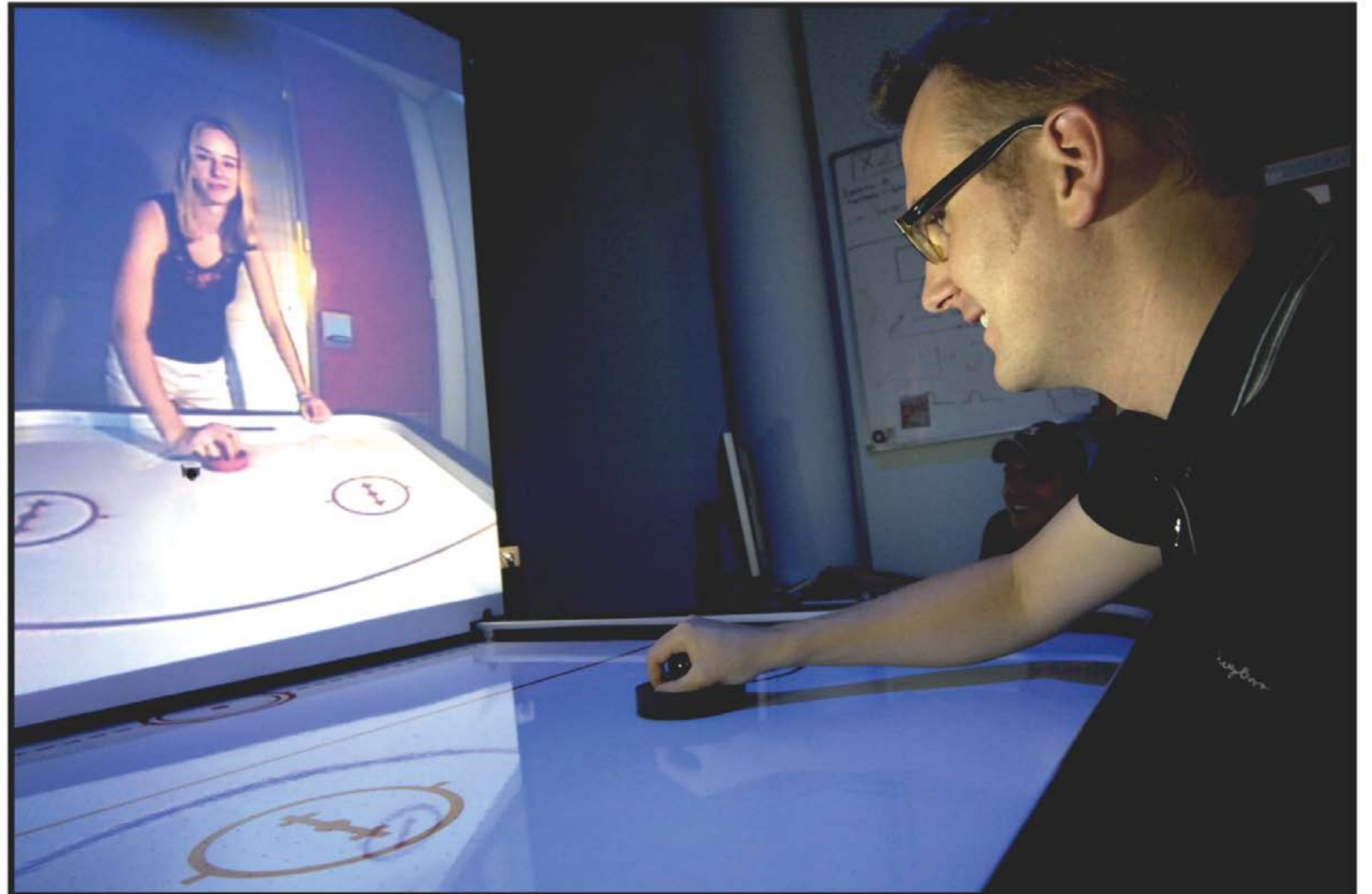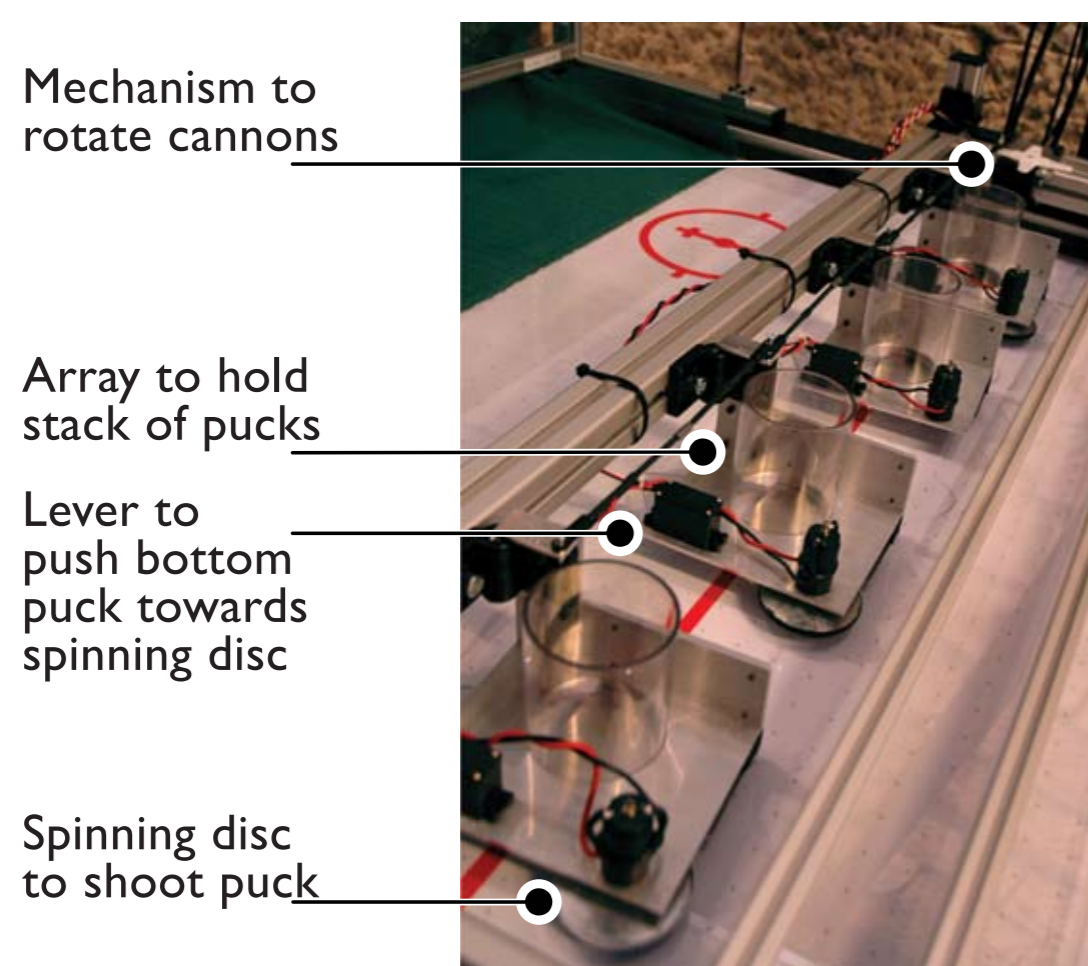# Airhockey Over a Distance

Florian 'Floyd' Mueller, Luke Cole, Shannon O'Brien, Wouter Walmink

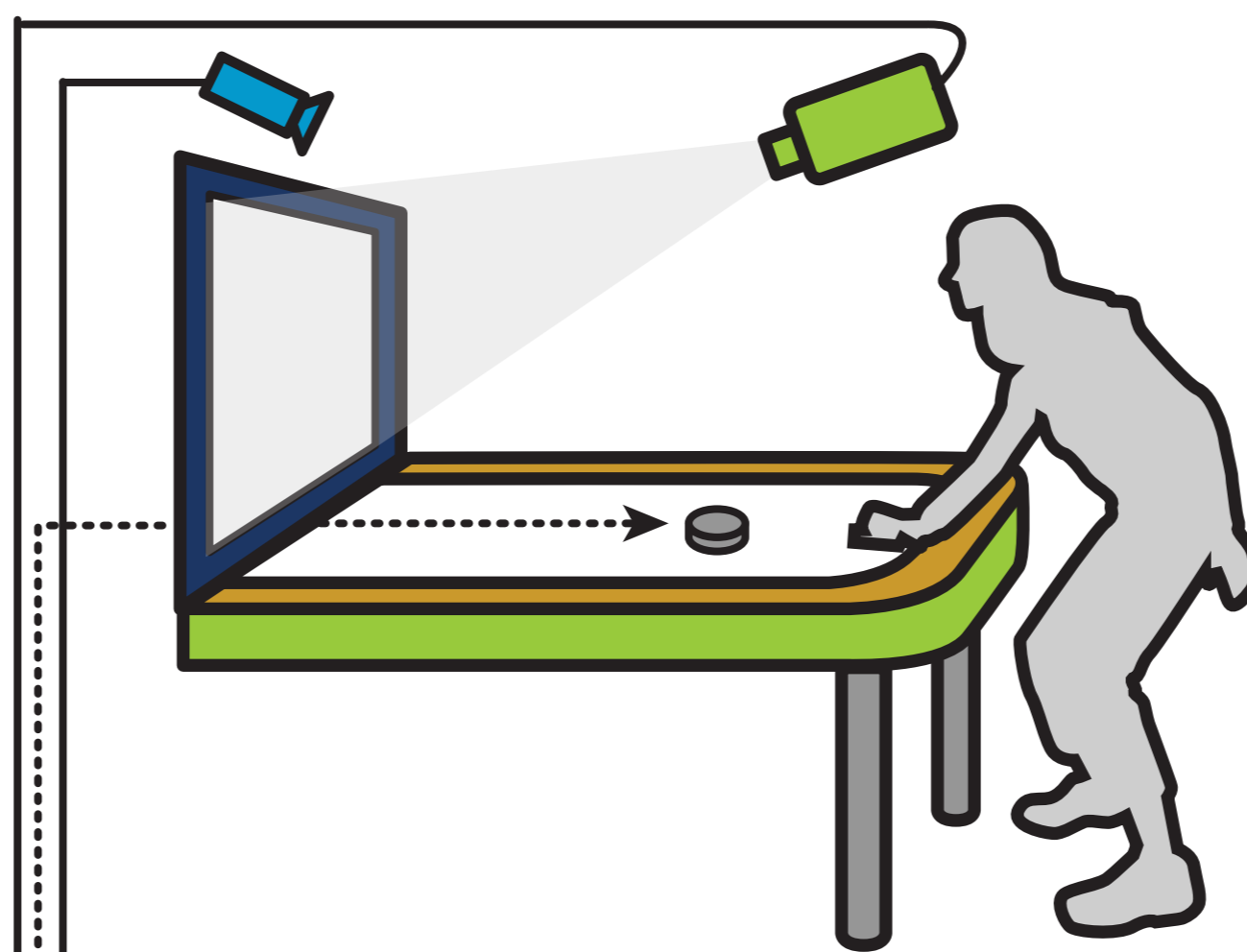Connecting People Group, CSIRO - ICT Centre, Australia

Airhockey Over a Distance is played like a conventional airhockey game. However, the table is split in half and the two ends are connected via a network. The players shoot a real puck back and forth, trying to score a goal. Once the puck passes the midway-line, its location is detected, and a corresponding physical puck is shot out at the other table. The physical and powerful action of hitting a real puck, its tranformation into the virtual space and the physical reappearance on the remote end contribute towards the perception of a shared space in which the players interact.

Airhockey Over a Distance (Photo by Andrew Tully, Sydney Morning Herald)
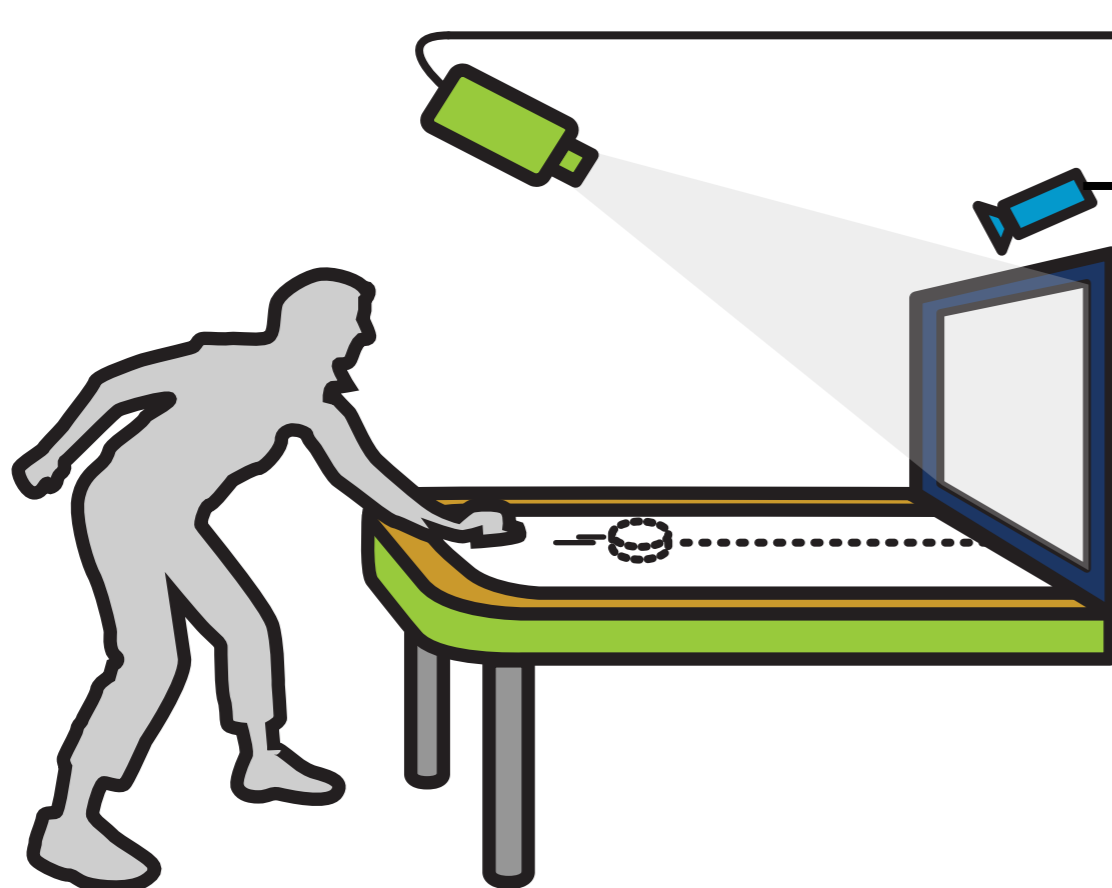

Mechanism to rotate cannons

Array to hold stack of pucks

Lever to push bottom puck towards spinning disc

Spinning disc to shoot puck

The puck cannons

The players can see and hear each other via a DV-quality videoconference

The video image is projected from above

The players shoot a real, physical puck 'through' the network

We hypothesize that an interaction with a real, physical puck can foster a better sense of connectedness than an interaction with a virtual puck. During a conference-like event, approximately 30 people interacted with Airhockey Over a Distance, as well as a game with the same setup but with a virtual puck. The comments support our prediction that Airhockey Over a Distance can foster a sense of connectedness, and even more so than the interaction with the virtual puck. After playing the game with the real puck, participants noted, "This feels like my first salsa lessons... I'm slightly confused, but it's a shared experience to talk about..." and "I'm taken with this... you could have a true interaction with someone, they could make you laugh, they could make you swear... that kind of interaction is unique, without abusing the word."

We have gathered supportive feedback that interactions with physical game pieces can facilitate an increased connectedness through social interaction between spatially separated participants.