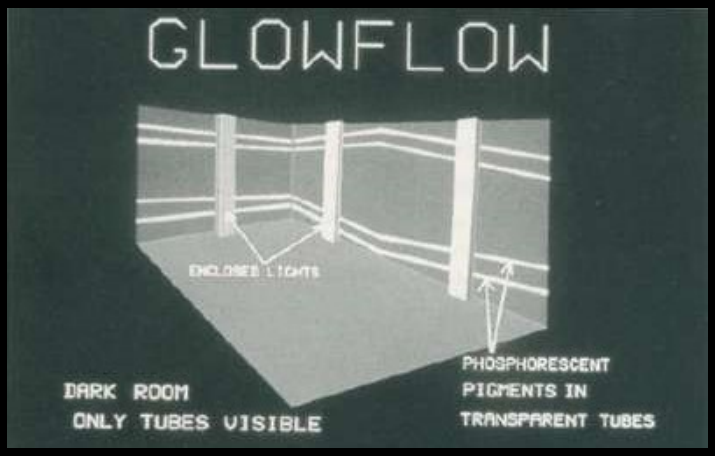
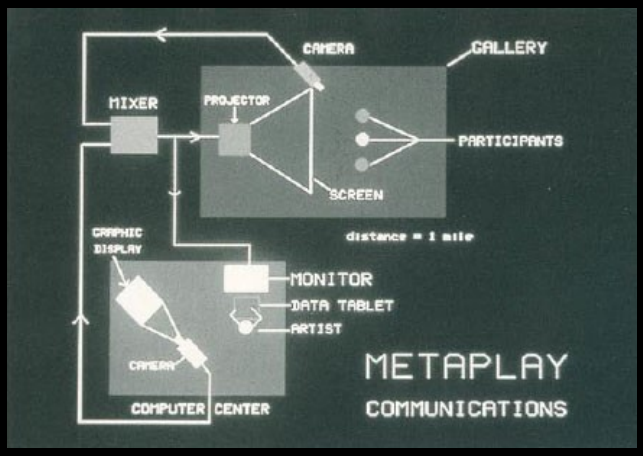
1969-1971 Responsive Environments. In effect, electronic playrooms, in which people used their bodies to interact with computer assisted sound and vision. This movement was driven by the pioneering computer artist Myron Kreuger.

“Glow Flow” was the first of these Responsive Environments, exhibited to the public at the University of Wisconsin, USA in 1969. Imagine a dark room enfenced by six pillars intersected by tubes of ultra-violet reactive water. By each pillar was a floor pressure switch that the shuffling 15-20 people inside could trigger, often by accident. Each press would step through a sequence of lights in the pillar radiating a neon effect down the adjacent tubes. It would also play electronic sounds that could swirl around the room.

Running this magical Human Computer Interaction was a hidden DEC PDP-12 minicomputer and Moog synthesiser. By design, the delayed speed at which these interactions occurred left people in a state of wonder… wondering if they were controlling anything at all.





The 1970 “Metaplay” environment addressed this confusion with a much more direct cause and effect relationship. The technology consisted of a video camera, projector, mixer, and behind-the-curtain Wizard of Oz computer operator.

In a dark gallery room, one to three participants would be greeted by a life-sized black and white video projection of themselves. One mile away, a computer artist would start to paint on this live feed using vector graphics. Gallery participants and the computer operator were free to play together in this new artificial reality.

A treasure trove of ideas were explored: “The artist could draw on a participant’s image or could draw around it so that the participant appeared to be standing in a shower. Or, she could draw a graphic door that opened whenever a participant touched it. Alternatively, the artist could communicate directly by writing words, or could attempt to induce the participant to play a game, such as tic-tac-toe [noughts and crosses]. Finally, she could play with the act of drawing itself, as she transformed one kind of picture into another.

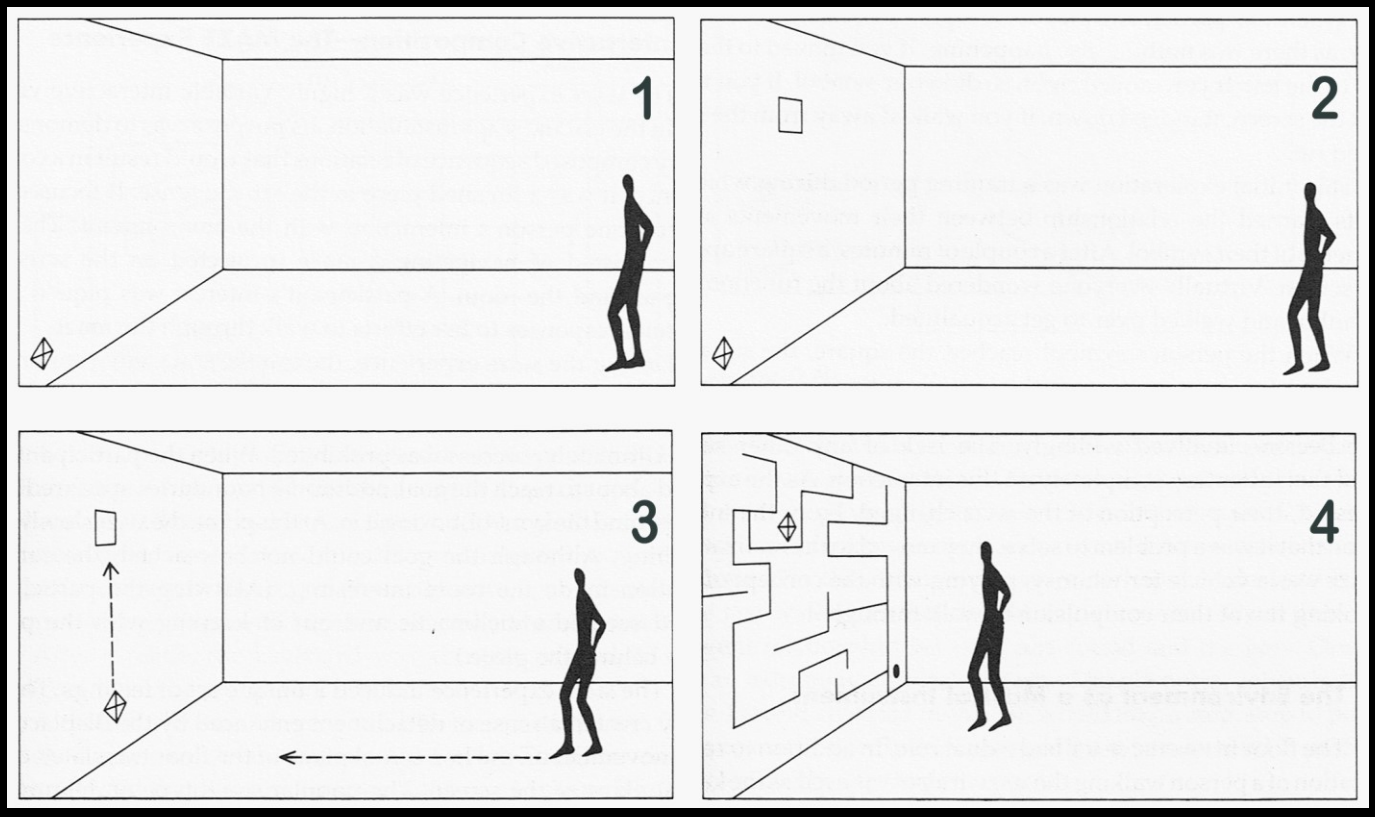
The operator could make an outline dance to music in the gallery. The artist would try one idea after another to try to involve the participants. The artist could also direct the cameraman in the gallery to focus on any individual.

By drawing on a user's hand and not erasing the mark, participants could draw on screen. Some would pass the drawn line to another's hand so they could continue the artwork. These interactions were terminated by the lights-dimming and artist writing 'Good-bye' or something similar."

This experience built-upon the work headed by computer graphics pioneer Ivan Sutherland at the MIT Lincoln Laboratory. His 1963 "Sketch Pad" graphical user interface system made the Metaplay artist's job far more intuitive and immediate. "The Sword of Damocles" tethered and cumbersome virtual reality headset (1968) showed how the real world could be mixed with the virtual world of computers. Psychic Space (1971) took ideas from Glow Flow and Meta Play with an almost fully computerised experience. People queuing up to enter this single player experience were let in one at a time, often by a child at the door who would restart the programme and keep an eye on the time.

Upon walking in, you would see a computer-generated diamond symbol appear on a projected screen (1). If the player moved, the symbol would move with them, up, down, left and right, tracked by a grid of floor sensors. As the player moved a different musical note would play depending upon which part of the floor they stood on. The floor became a giant musical keyboard.

A couple of minutes later a mysterious square would appear (2). If the player should lead their diamond symbol to touch the square (3) a maze would appear (4). Taking careful steps to keep within the lines, players could traverse the labyrinth. Cheating had been anticipated. Players cheating by crossing a virtual line might find their symbol disintegrate, or have the line stretch elastically to pen them in. Their symbol might push the maze across the screen, or the maze might rearrange itself. They could never win.



For those more interested in playing musical tunes, the note layout would rotate from time to time to further disorientate the user. After 15 minutes of fun or frustration the player would be ushered out of the room.

From these early Responsive Environments, Myron Kreuger would go on to form the Artificial Reality Corporation paving the way for the likes of the Sony Eye-Toy and Microsoft Kinect. All ways to control a computer unencumbered by anything more than your own body.

Except from chapter 15 of One Switch 100. Available at the OneSwitch.org.uk Library Musuem.