

Alan J. Pierce



Virtual Reality—Under the Medical Microscope

Virtual reality is questioned and applied in medical research.

A RECENT Japanese medical study found that long exposure to the stereoscopic head gear for virtual reality (VR) arcade games can cause, at least temporarily, visual focusing problems. Virtual reality expert Kageyu Noro used student volunteers to test the effect of three-dimensional goggles on the eyes' ability to focus on objects near and far.

VR head gear contains two small liquid crystal video displays. These displays provide the wearer with two slightly different views of the virtual world. With 3-D goggles, the brain visualizes objects with all kinds of related motion, but the wearer's eyes actually stay in the same focus, since the images aren't actually moving.

The cause of the temporary impair-

ment is that the VR retracts the eyes' focusing reflex to artificial movement.

Subjects tested after viewing regular computer screens show no visual focusing impairments, probably because their eyes weren't experiencing a three-dimensional world.

The question becomes this: How safe is it to wear these goggles for extended periods? Is the visual impairment just temporary, or could long-time use lead to permanent eye damage?

Virtual reality has found its way

into other aspects of medical research. Since three-dimensional sensory information, even if it is artificial, can be so frighteningly real, a psychologist by the name of Ralph Lamson hypothesized that VR could be helpful in the treatment of acrophobia, or fear of heights. Lamson's subjects "walked around" in an artificial high-in-the-sky environment created by Division Incorporated, a virtual reality company in Redwood, City, CA.

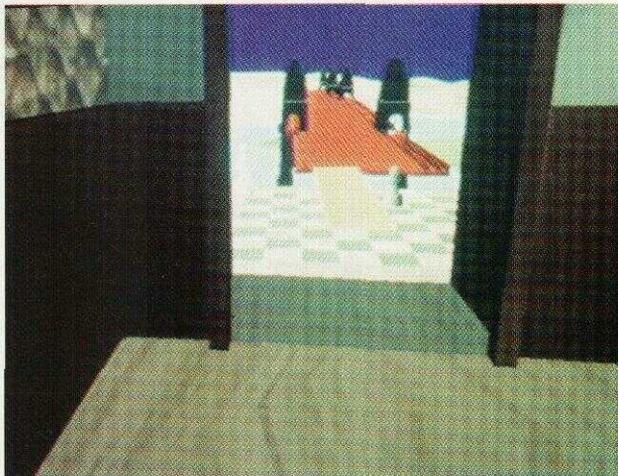


Photo courtesy Division Inc.

Part of a virtual reality program for therapy for acrophobics

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After only one VR experience, 91 percent of test subjects actually walked across the Golden Gate Bridge in San Francisco. This technology is also finding its way into the architect's office and the design studio. Will the virtual vacation become the in thing during the start of the twenty-first century?

Recalling the Facts

1. What in VR goggles allows the wearer to see a three-dimensional virtual world?
2. What eye problem was discovered by Kageyu Noro's study?
3. What is acrophobia?
4. How might a VR program help people who have phobias? **Ha**

Unintentionally omitted from this column were photo credits to Boeing Commercial Group for January and to Dimensional Foods for February.

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