Author(en) des Beitrags:
Hofmann, J.; Jäger, T.; Deffke, T.; Bubb, H.

Titel des Beitrags:
Effects of Presence on Spatial Perception in Virtual Environments

Abstract:
The influence of the sense of presence on spatial perception in a multi-sided back projection virtual reality system was investigated. Such an influence could diminish the reliability of spatial judgements in virtual environments (VEs), users' presence being only in part controllable. The VE used was a virtual passenger car cockpit. It provided a variety of distance, depth, and size cues. The sense of presence was manipulated by varying a number of technological, content-related, and other contributing factors in four experimental settings. Presence was measured with a questionnaire based on a three-dimensional presence concept (Schubert et al., 1999a). In these four VE settings, seventy-seven participants adjusted the size of the virtual cockpit to the memorized size of a real one. As the main result of the study, regression analyses yielded significant correlations of all three presence dimensions with distance/size estimations. A cognitive mechanism explaining the observed correlations is proposed. An analysis of this mechanism can help enhancing the reliability of spatial judgements in VEs. Effects of the setting variation on mean presence values were notable but weak. Apparently, the systematic influence of the contributing factors on presence was dominated by participants' individual reactions. Finally, systematic variations of mean size judgements across the four settings were found. Those are attributed to direct effects of two contributing factors (frame rate and surface brightness).

Kongress-/ Buchtitel:
Proceedings of the 4th Annual International Workshop on Presence

Verlagsort:
Philadelphia

Jahr:
2001

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Maschinenwesen > Institut für Produktionstechnik > Lehrstuhl für Ergonomie (Prof. Bengler) > 2001

entries: