

Identifying efficient Users of AR-Systems

Aufgabenstellerin: Prof. Gudrun Klinker

Betreuer: Björn Schwerdtfeger

Erwin Yükselgil

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Chair for Computer Aided Medical Procedures & Augmented Reality

Department of Computer Science | Technische Universität München

Contents:

- The Idea
- The Motivation
- The Tests
- Results
- Suggestions and thoughts

- The Idea
 - Identifying Efficient Users of Augmented Reality Systems
by means of
 - intelligence, psychological, and 3D perception tests
 - social background analysis
 - motivation tests, computer anxiety and efficacy tests
 - etc.

Motivation for Identifying Efficient Users of Augmented Reality Systems

- designing a “good” UI
 - cultural differences
 - gender differences
 - individual differences
 - age, experience
 - costs and time

- Theory
 - if assessment method exists
 - can “deficient” UI be used
 - can a production gain be achieved

Related Work

- Cultural Consideration in Interactive System Design
(U. Neumann, A. Majoros)

- Gender Differences in Cue Preference During Path Integration in Virtual Environments
(F.C. Fortenbaugh, S. Chaudhury, J.C. Hicks, L. Hao, K.A. Turano)

- Evaluating the effectiveness of Augmented Reality and Wearable Computing for manufacturing assembly task
(K. M. Baird)

- Identifying Likely Successful Users of Virtual Reality Systems
(T. Howe)

The Tests

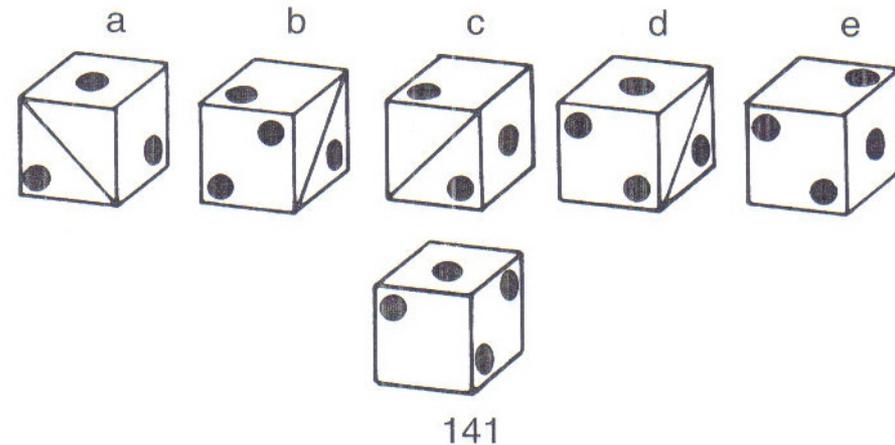
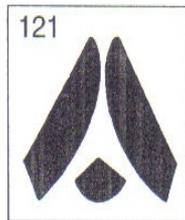
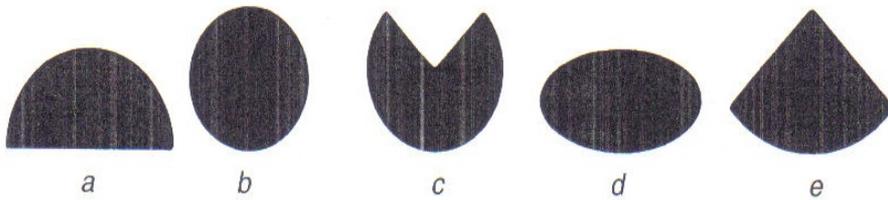
- NEO-PI-R
 - The Big Five
 - Neuroticism
 - Extraversion
 - Openness
 - Conscientiousness
 - Agreeableness
 - Duration ca. 45 min. (200 questions)

- I-S-T 2000 R

- contains exercises for

- verbal and numeric abilities (each 60 questions)
 - spatial sense (60 questions)
 - testing the capacity for remembering (each: 10 items to learn, 10 questions)

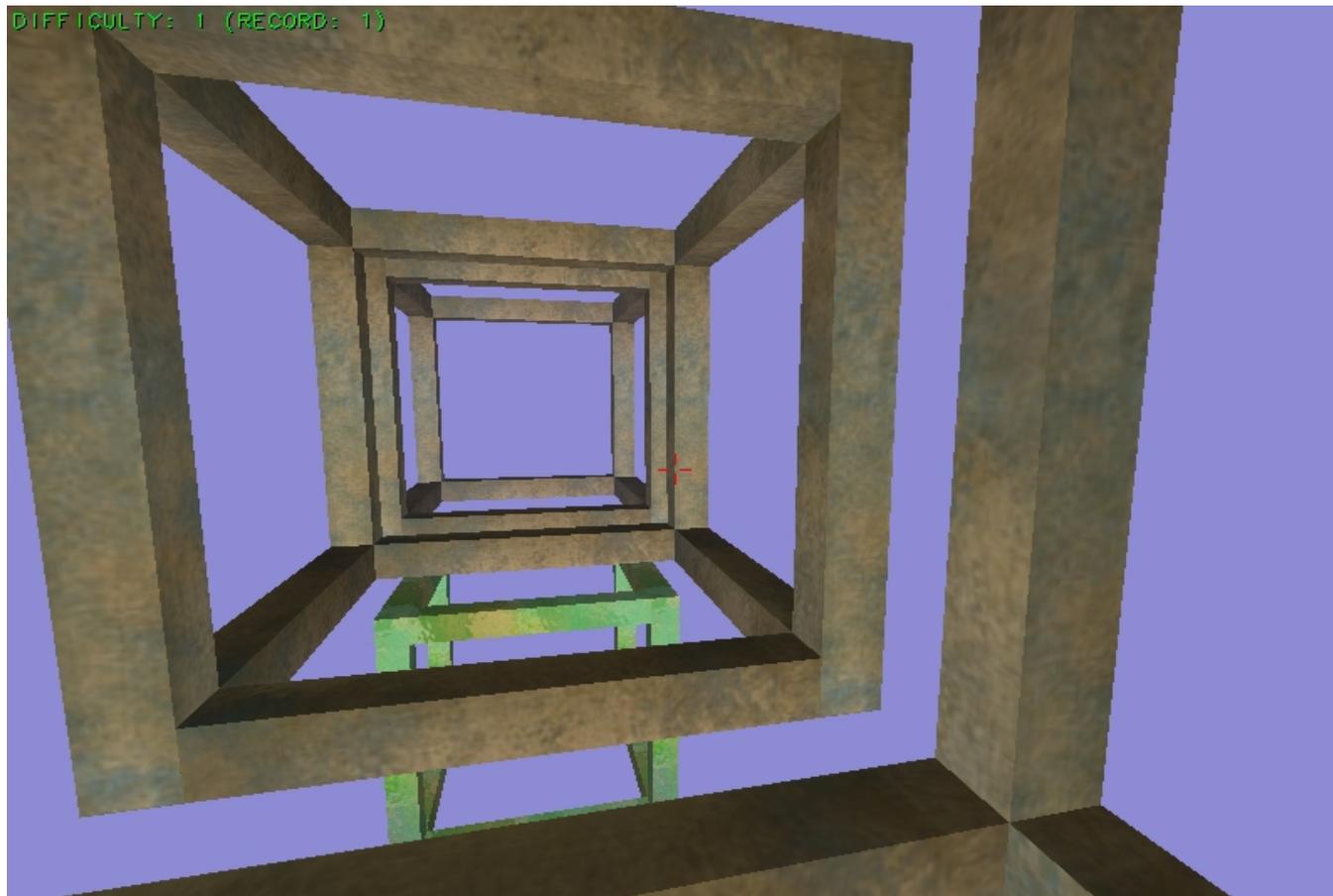
- Duration: ca. 100 min.



The stage-run



3D-Labyrinth



The AR -Tests



The AR Visualisations



The Results

- 31 subjects were tested
- picking errors were negligible

- tendencies for predictors for picking time
 - stage-run (strongest)
 - verbal IQ and Neuroticism

Suggestions and thoughts

- Should have
 - more subjects (> 200)
 - standardised shelf distance
 - same overall distance for each task
 - a measure for level of difficulty for visualisations

- Can do
 - different IQ and/or personality tests
 - add tests (locus of control, computer anxiety & efficacy etc.)
 - taking gender, social background and experience into account