

Slide 1



University of Stuttgart
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Effect of Hand-movement on the Presence of another Person in a Virtual Environment

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Virtual and Augmented Reality | Stuttgart | 12.07.2019

 Visualization and
Interactive Systems Institute

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Motivation

Current Meetings	Virtual Reality
	

VR-Meetings: Does Hand-movement have a positive influence on Co-Presence?

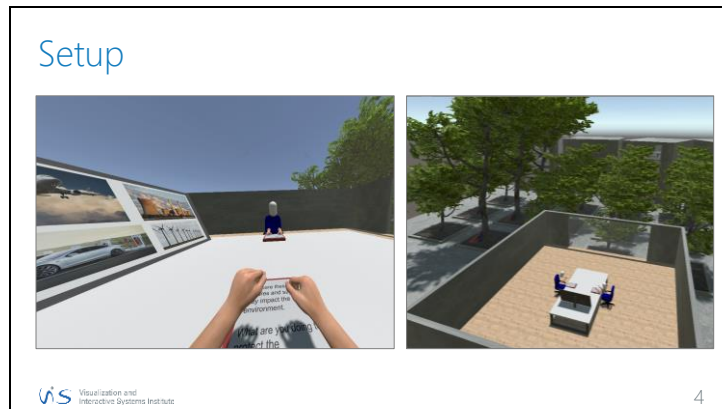
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Study

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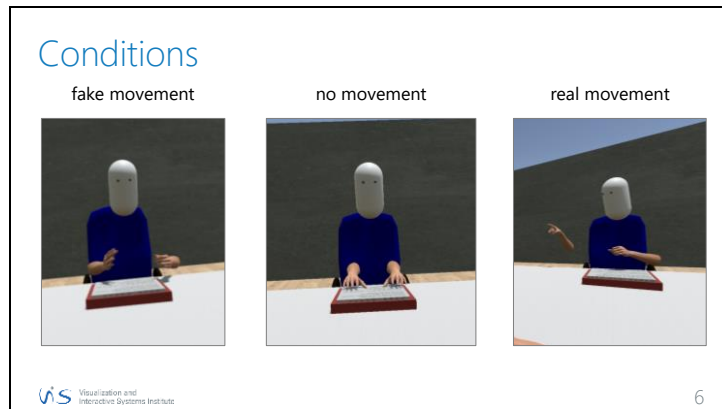
Jan

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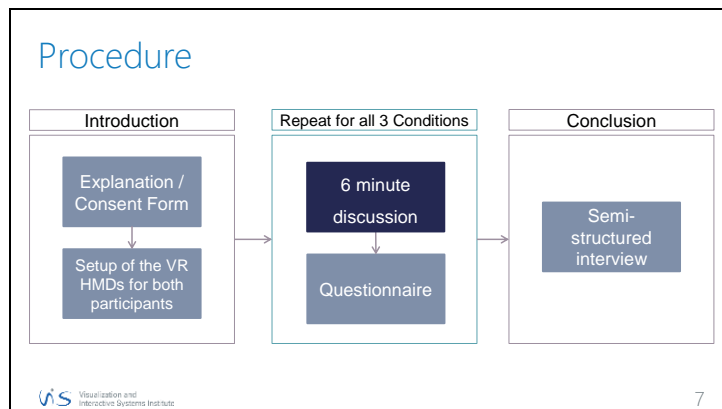
- 12 participants
- 11 male, 1 female
- 23 – 28 years old ($M = 24.5$)
- 11: previous VR experience, 1 none

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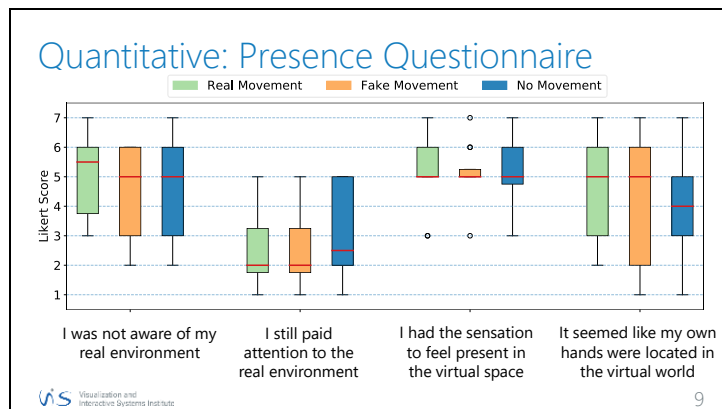
Jamie

Own hand movement always „real“



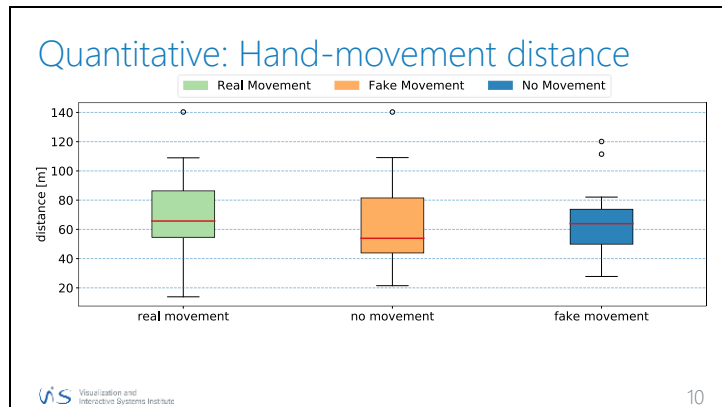
- klick for every box to appear (introduction, study, conclusion)
- Procedure: told them to discuss topics → not tell them study about hand movement
- 3 sessions → 6 min discussion for each condition
- Questionnaires for (co) presence
- Interview for qualitative feedback
- Position of palms for distance

Results



- Jamie
- Q1 & I was not aware of my real environment
- Q2 & I still paid attention to the real environment
- Q3 & I had the sensation to feel present in the virtual space
- Q4 & It seemed like my own hands were located in the virtual world
- no significant differences

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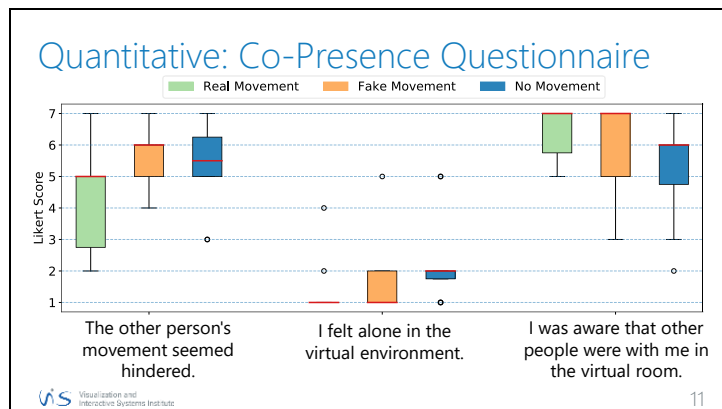


Jan

calculation: using Euclidean distance

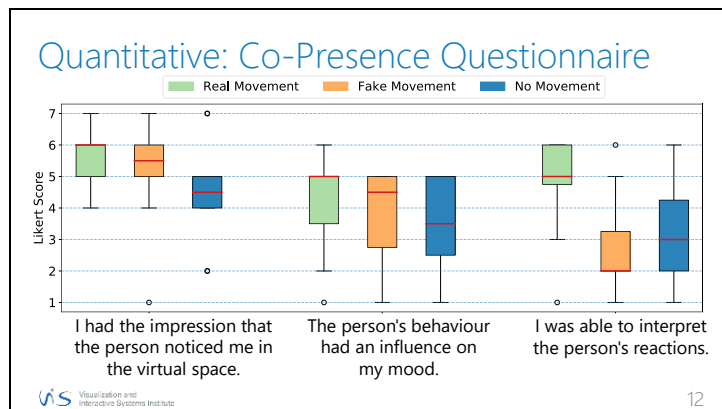
→ no significant difference

→ Confirms the no significant finding from presence



Felix

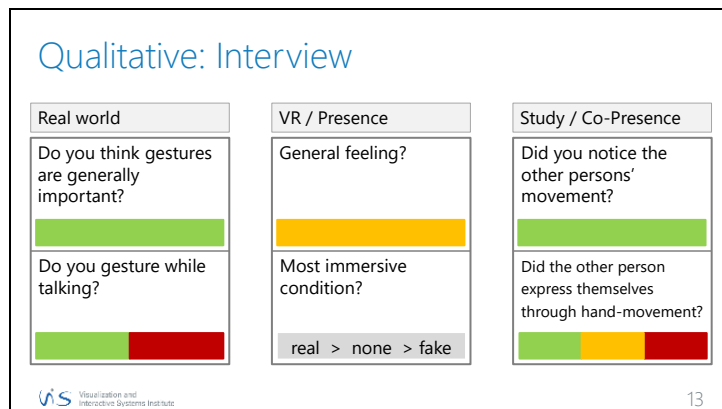
- Q17: I was aware that other people were with me in the virtual room. → no signif. diff.
- Q19: I felt alone in the virtual environment. → no x real
- Q22: The other person's movement seemed hindered. → fake x real



Felix

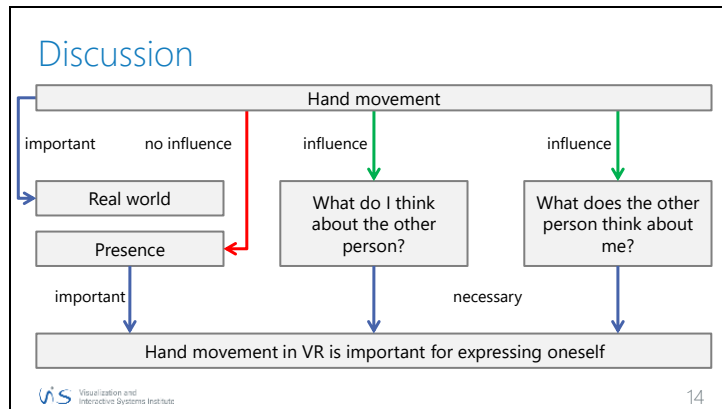
significant questions:

- Q16: I had the impression that the person noticed me in the virtual space. → no x real
- Q6: The person's behaviour had an influence on my mood. → t-test: no x real
- Q12: I was able to interpret the person's reactions. → fake x real & no x real



- Jamie
- General feeling: most participants liked ability to move hands, but criticised technical implementations (transmission problems, hands disappearing)
- which condition most immersive? real movement > no movement > fake movement
- gestures important? yes
- participant uses many gestures? 50% yes, 50% no/not really
- notice other person moving? yes
- expressed other person through movement? 33% yes, 33% not at all, 33% strange movements → now and then yes but mostly no

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- Jan