The Relationship between Virtual Self Similarity and Social Anxiety
Presentation Overview

- Social Anxiety
- VR and self-representation
- Studies
Social Anxiety
Definitions and measuring instruments
Social Anxiety

**Definition**
Social anxiety is an intense fear of negative evaluation from others in social or performance situations.

**Self-image**
- negative self-image
- magnifying negative aspects
- past failures
<table>
<thead>
<tr>
<th><strong>Social Anxiety</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRCA-24</strong></td>
</tr>
<tr>
<td>▶ Personal Report of Communication Apprehension</td>
</tr>
<tr>
<td>▶ composed of twenty-four statements concerning feelings about communicating with other people</td>
</tr>
<tr>
<td><strong>SPIN</strong></td>
</tr>
<tr>
<td>▶ Social Phobia Inventory Assessment</td>
</tr>
<tr>
<td>▶ a 17-question survey developed at Duke University that has been clinically validated as a measure of social anxiety</td>
</tr>
<tr>
<td><strong>BFNE</strong></td>
</tr>
<tr>
<td>▶ Brief Fear of Negative Evaluation Scale</td>
</tr>
<tr>
<td>▶ a measure of a person's tolerance for the possibility they might be judged disparagingly or hostilely by others</td>
</tr>
</tbody>
</table>
Self-consciousness is the enemy of all art, be it acting, writing, painting, or living itself, which is the greatest art of all.

– Ray Bradbury
Virtual Reality

self-representation
Virtual Reality

- alternate reality
- transforming the appearance of one’s self
- new avatar ⇒ new self-representation
- behavioral and attitudinal shifts
Past

- manipulating features of the audience
- Virtual Reality Exposure Therapy

Present

- transformation of the virtual self
- virtual embodiment through an avatar → virtual mirror
Studies

Pilot study and Study 1 & 2
Pilot Study

- imagined virtual speech task
- avatar similarity preference and trait public speaking anxiety
- 252 participants; PRCA-24; about VR
- the higher social anxiety, the stronger the preference for embodying a dissimilar avatar
Study 1

- *self, other & choice*

- **H<sub>1</sub>. self** - higher levels of self-perceived physiological sensations and state anxiety

- **RQ<sub>1</sub>. choice** - different levels of anxiety?

- **RQ<sub>2</sub>. levels of self, social and spatial presence?**

- **B-FNE, Body Sensations Questionnaire & presence scale**
Design and Procedure

- avatar
- three-minute speech
- anxiety before and after

Source: The Relationship between Virtual Self Similarity and Social Anxiety
### Results

<table>
<thead>
<tr>
<th></th>
<th>Anxiety before speech</th>
<th>Anxiety after speech</th>
<th>Self Presence</th>
<th>Social Presence</th>
<th>Spatial Presence</th>
<th>BSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>45.65</td>
<td>49.75</td>
<td>2.14</td>
<td>3.69</td>
<td>3.05</td>
<td>31.25</td>
</tr>
<tr>
<td>Choice</td>
<td>41.75</td>
<td>45.29</td>
<td>1.98</td>
<td>2.94</td>
<td>2.56</td>
<td>28.93</td>
</tr>
<tr>
<td>Other</td>
<td>39.85</td>
<td>42.38</td>
<td>2.29</td>
<td>3.18</td>
<td>2.82</td>
<td>27.08</td>
</tr>
</tbody>
</table>
Study 2

- *self, other & choice*
- larger sample size, longer speech, preparation
- $H_1$. *self* - higher levels of self-perceived physiological sensations and state anxiety
- $RQ_1$. levels of self, social and spatial presence?
- STAI, Body Sensations Questionnaire & presence scale
Study 2

- 14% anxiety reduction by BSQ in other
- yet, unchanged levels by STAI
- self-presence scores higher in other
Discussion
low self-presence in both Studies

embodiment/identification
generic body, movement limitation

% of time
- looking at mirror
Potential

- Negatively distorted self
- Understand your phobia from a different perspective
- Work on correcting the self image and improving confidence
**Apparatus**

nVisor SX111 head-mounted display (2560, 1024)
Worldviz PPT-E
Intersense3 Inertial Cube
Thanks!

Any questions?

Amina Hasimbegovic, amina.hasimbegovic@tuwien.ac.at