AVATAR THERAPY FOR AUDITORY HALLUCINATIONS

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EXTENT OF THE PROBLEM

- one in four people with schizophrenia continue to experience hallucinations and delusions despite antipsychotic medication, with severe impairment to their quality of life
- one in ten patients with schizophrenia commit suicide.
PHENOMENOLOGY OF ‘VOICES’

• when asked about the worst aspect of hearing persecutory voices, many people say ‘the helplessness’
• people who are able to establish a dialogue with the ‘voice’ feel much more in control (Nayani & David, 1996)

AVATAR THERAPY

• Developed for people with persistent persecutory voices despite adequate medication
• Sequence of therapeutic procedures:
  • 1. An avatar is created by the patient to represent the ‘voice’
  • 2. A dialogue with the avatar brings it under the patient’s control
  • 3. The avatar changes from being persecutory to supportive
RATIONALE FOR THE THERAPY

• Physical or sexual abuse, emotional neglect, and bullying by peers in childhood are associated with persecutory voices in adult life.
• This is mediated by low self-esteem and depression stemming from the trauma.
• Mean score on Calgary Depression Scale: control group 22.67
  experimental group 26.50
  Maximum 27

RATIONALE FOR THE THERAPY

• The critical abuser/uncaring parent (Fairbairn’s ‘internal saboteur’) cannot be tolerated in the patient’s mental space and is externalised as a persecutory voice.
• As a result any control the patient had over the abuser, however meagre, is lost.
• The externalised persecutor becomes autonomous and takes over control of the patient.
• The aim is ‘to give the patient’s ego back its mastery over lost provinces of his mental life’.
Avatar System Components

1. Face matching - ‘Facegen’
2. Animation - ‘Annosoft® LIP-SYNC’
3. Voice matching
   – Novel real-time voice-morphing technology
4. MP3 player to record sessions

MATCHING THE FACE

• Relatively easy to match the face, but some patients did not experience a face which was associated with the voice
• These patients were asked to choose a face they would feel comfortable talking to
MATCHING THE VOICES

• The therapist’s voice is morphed to create both male and female voices
• It would be preferable to use a female for female voices
Avatar Therapy System Configuration

Therapist

Amplifier

Audio IO

Voice Changer & Push-to-talk

Audio Lip Sync

Animated Head

Room partition

PC

Patient

Normal

Morphed

Audio IO

Lip Sync

PC

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EXPERIMENTAL DESIGN

• Randomised controlled trial with a cross-over of controls
• Experimental patients receive 6 weekly sessions of avatar therapy, then a 1 week follow-up
• Controls receive treatment as usual for 7 weeks, then are offered the experimental therapy
• Patients who have had the therapy receive an additional 3 months follow-up

ASSESSMENT INSTRUMENTS

• basic information: age, gender, education, job, medication, duration of hearing voices
• Psychiatric Symptoms Rating Scale: hallucinations (PSYRATS)
• Beliefs About Voices Questionnaire (BAVQ-R) omnipotence & malevolence scales
• Calgary Depression Scale for Schizophrenia (CDS)
FOLLOW-UP ASSESSMENTS

• Conducted by a user-researcher who has heard persecutory voices in the past but has been free of voices for 8 years
• He is blind to the treatment status of the participants and the trial design

PARTICIPANTS AND DROP-OUTS

• 26 Participants recruited from community mental health teams in North London
• 14 Randomised to therapy and 12 to treatment as usual
• All controls followed up at 7 weeks
• 8 Controls accepted therapy
• 8 Experimentals completed therapy
• A total of 16 participants received therapy
• All 16 were followed up 3 months after the end of their therapy
26 PARTICIPANTS

- Age: range 14-74
- Mean 37.7
- Gender: female 10, 38.5%
- Length of time hearing voices:
  range 3 ½ ->30 years
- Mode: >10 years
Saul: VOICE FOR 16 YEARS

- Took advice from the Devil and got into severe debt
- **His voice ceased after 2 sessions**
- Saul thanked us for giving him his life back and said: my mind is completely clear now
  - Now working abroad as a financial consultant

TWO OTHER SURPRISES

- A man of 74 heard the voice of a woman running business meetings from 5 a.m. throughout the day for 4 years.
  - **Her voice ceased after 2 sessions**
- A young man who had been sexually abused as an adolescent heard his abuser for 13 years saying he was to blame and was spoiled for ever.
  - **His voice ceased after 5 sessions**
William: CHANGES OVER TIME

<table>
<thead>
<tr>
<th>TIME</th>
<th>VOICES</th>
<th>DEPRESSION</th>
<th>LOW SELF-ESTEEM</th>
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<tbody>
<tr>
<td>BASELINE</td>
<td>30</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>AFTER THERAPY</td>
<td>30</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>3 MONTH F-U</td>
<td>24</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
### CHANGES IN TOTAL SCORES

<table>
<thead>
<tr>
<th></th>
<th>PSYRATS</th>
<th>BAVQ</th>
<th>CDS</th>
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<tbody>
<tr>
<td>BETWEEN GROUP EFFECTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-8.75</td>
<td>-5.88</td>
<td>-0.94</td>
</tr>
<tr>
<td></td>
<td>P= 0.003</td>
<td>P= 0.004</td>
<td>NS</td>
</tr>
<tr>
<td>CONTROL GROUP TAU vs Therapy</td>
<td>T1 to T2</td>
<td>T1 to T2</td>
<td>T1 to T2</td>
</tr>
<tr>
<td></td>
<td>P= 0.027</td>
<td>P= 0.042</td>
<td>NS</td>
</tr>
</tbody>
</table>

### FOLLOW-UP DATA

<table>
<thead>
<tr>
<th></th>
<th>PSYRATS</th>
<th>BAVQ-R</th>
<th>CDS</th>
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<tbody>
<tr>
<td>3M Follow Up vs Post Treatment</td>
<td>-3.5</td>
<td>-1.14</td>
<td>-2.8</td>
</tr>
<tr>
<td></td>
<td>P&lt; 0.029</td>
<td>NS</td>
<td>P= 0.052</td>
</tr>
</tbody>
</table>

NS: not significant
THREE MONTH FOLLOW-UP

• Patients continued to improve: Further significant reduction in PSYRATS
• Significant reduction in Depression score
• Probably due to use of MP3
• The 3 patients whose voices ceased: voices still absent

PLANNED SUBSIDARY ANALYSIS

• Reduction in suicidal thoughts $P=0.034$
• Power calculation based on a reduction of 35% in Omnipotence score
• Reduction in Omnipotence score 29% at end of therapy
• 37.9% at 3 month follow-up
HOW DOES AVATAR THERAPY WORK?

• Validation of the patient’s experience
• Patients interact with the avatar as though it is a real person, but since it is their creation they know it can’t hurt them
• They learn to stand up to the avatar and take control of it
• This generalises to the persecutory voice leading to a reduction in its perceived omnipotence

HOW DOES AVATAR THERAPY WORK?

• During the course of therapy the avatar changes its nature, ceasing to abuse the patient after one or two sessions, and gradually becoming friendly and supportive
• This change results in a reduction of the perceived malevolence of the voice, enabling the reintegration of the externalised hypercritical parent/abuser
• Patients can use the MP3 to listen to the sessions whenever they hear the voices
• We tell them they have a therapist in their pocket.
• This may explain the further improvements after the end of therapy
2 publications on Avatar Therapy


2 publications on Avatar Therapy

• Psychosis online
• Avatar therapy for persecutory auditory hallucinations: What is it and how does it work? (same authors) March 4, 2013
  • http://dx.doi.org/10.1080/17522439.2013.73457