Testing the Filmic Experience: Audio Subtitling and Psychophysiology


TransMedia Catalonia Research Group
Universitat Autònoma de Barcelona

UMAQ conference – Barcelona – 4th - 5th June
Audio Subtitling

AST as the **aurally** rendered subtitles. AST are **read**, sometimes **acted out**, by voice actors or by TTS. AST are recorded as a form of **voice-over**. AST are recorded in a **semi-dubbed** form.

(Reviers & Remael, 2015)

Challenges: hybrid technique

- Interface between **subtitling, audio description** and **voice-over**.

(Braun & Orero, 2010)
Effects

Dubbing effect
• Acted (“imitation” of orality) (see Baños & Chaume, 2009; Sánchez Mompeán, 2016)
• Original is not heard
• Synchronised

Voice-over effect
• Read (less changes in prosodic features)
• AST is superimposed and original can be heard
• AST displayed after the original (imperfect isochrony)
Methodology: User Experience and Emotion

Questionnaires

SAM questionnaire (Self-Assessment Manikin)

Psychophysiology

GSR (Galvanic Skin Response)
HR (Heart Rate)
The T-SAM (Tactile-SAM)
The Experiment
Variables and Participants

Emotions

<table>
<thead>
<tr>
<th>Emotions</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadness</td>
<td>N=42</td>
</tr>
<tr>
<td>Neutral</td>
<td>Age=19-73 (median=38)</td>
</tr>
<tr>
<td>Fear</td>
<td>♂ 17</td>
</tr>
</tbody>
</table>

Conditions

<table>
<thead>
<tr>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dubbing effect</td>
</tr>
<tr>
<td>Voice-over effect</td>
</tr>
</tbody>
</table>
Stimuli

The series

- Wojenne dziewczyny [War Girls] (TVP1, 2017)
- Season 1
- 13 episodes

Clips

- ≅ 3 min scenes
- Unit
- Validated online
The Experiment
Experimental protocol

Pre-test Questionnaires
Demographics

T-SAM questionnaire
After each clip

Each participant
Three clips (three emotions)
• 2xConditionA, 1xConditionB
• 1xConditionA, 2xConditionB

Preference Test
Audio Subtitling (voices and effects)
Audio Description
Preliminary results: T-SAM

Valence

ANOVA - Valence

<table>
<thead>
<tr>
<th>Cases</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Condition</td>
<td>0.340</td>
</tr>
<tr>
<td>Emotion * Condition</td>
<td>0.078</td>
</tr>
</tbody>
</table>
Preliminary results: T-SAM

Arousal

ANOVA - Arousal

<table>
<thead>
<tr>
<th>Factor</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Condition</td>
<td>0.669</td>
</tr>
<tr>
<td>Emotion * Condition</td>
<td>0.078</td>
</tr>
</tbody>
</table>
Conclusions

For the SAM questionnaire:

• Emotions targeted, were induced
• Results provided are consistent
  • **Fear**: low valence/high arousal
  • **Sadness**: very low valence/medium arousal
• T-SAM proved effective (although it needs more research)
• **Conditions** (effects) were not relevant, only in **Valence** for **Fear**
Preliminary results: Psychophysiology

EDA Average (- baseline)

ANOVA - EDA (- baseline)

<table>
<thead>
<tr>
<th>Factor</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>0.239</td>
</tr>
<tr>
<td>Condition</td>
<td>0.481</td>
</tr>
<tr>
<td>Emotion * Condition</td>
<td>0.634</td>
</tr>
</tbody>
</table>
Preliminary results: Psychophysiology

HR Average (- baseline)

ANOVA – HR (- baseline)

<table>
<thead>
<tr>
<th>Factor</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion</td>
<td>0.681</td>
</tr>
<tr>
<td>Condition</td>
<td>0.061</td>
</tr>
<tr>
<td>Emotion * Condition</td>
<td>0.226</td>
</tr>
</tbody>
</table>
Conclusions

For the psychophysiological measures:

• **EDA** does not show statistically differences across Emotion nor Condition.
  • Standard error points out high variability of data
  • **VO** seems to be more effective in inducing Sadness
• **HR** shows a trend to significance for Condition
  • Differences observed in Fear and Neutral emotions (the latter, unexpected).
  • **Fear** seems better induced in **VO** condition
  • Standard error points out high variability of data
• Further analyses on these data are needed to determine concomitant factors that can be relevant (i.e. Age of participants?)
Conclusions

On-going experiments:

- Sighed participants
- Same stimuli (Subtitled in Spanish)
- Same methodology
- N=45 (Expected)
- Correlation with personality traits:
  - State-Trait Anxiety Inventory (STAI) (Spielberg et al., 1983)
  - Zuckerman-Kuhlman Personality Questionnaire (ZKPQ) (Zuckerman, 2002) in its shortened version (ZKPQ-50-CC) (Aluja et al., 2006)
  - + Already used Toronto Alexithymia Scale (TAS-20) (Bagby et al., 1994)
References


Disclaimer

TransMedia Catalonia is a research group funded by the Secretariat for Universities and Research (Catalan Government), reference code 2017SGR113.

The project NEA (Nuevos Enfoques sobre Accesibilidad/New Approaches to Accessibility) has received funding from the Ministry of Economy, Industry and Competitiveness (Spanish Government), grant agreement No FF12015-64038-P, MINECO/FEDER.

Iturregui-Gallardo, G. is an FI grantholder awarded by the Agency for Management of University and Research Grants of the Catalan Government, reference code 2016FI_B 00012.

Texts, marks, logos, names, graphics, images, photographs, illustrations, artwork, audio clips, video clips, and software copyrighted by their respective owners are used on these slides for personal, educational and non-commercial purposes only. Use of any copyrighted material is not authorized without the written consent of the copyright holder. Every effort has been made to respect the copyrights of other parties. If you believe that your copyright has been misused, please direct your correspondence to: gonzalo.iturregui@uab.cat stating your position and we shall endeavour to correct any misuse as early as possible.

This document and its contents reflect the views only of the authors. TransMedia Catalonia and the Ministry of Economy, Industry and Competitiveness cannot be held responsible for any use which may be made of the information contained therein.

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.