Motivation

1. You never get a second chance to make a good impression.

2. Critical in the context of organizations, such as employment interviews and jobs requiring strong communication skills (sales, marketing, or hospitality).

3. Psychology researchers have shown that humans can make accurate inferences about others, even if the amount of information is very limited [1].

4. Nonverbal behavior has been established as a major channel through which information is communicated and constitutes a strong basis on which first impressions are formed [2].

5. Recent studies in social computing have established the feasibility of automatically inferring interview ratings [3] up to a certain level.

Objectives

1. Design and implement an in-house behavioral training procedure for hospitality students.
2. Collect data from two scenarios that are relevant for hospitality students i.e job interviews and reception desk.
3. Investigate the relationship between automatically extracted nonverbal cues and various perceived social variables in professional setting.
4. Explore the effect of feedback on student’s interview performance.

Design & Methods

Overall Design

1. Identified employment interviews and interactions with customers at a reception desk.
2. In the context of hospitality, in these situations behavior plays an important role.
3. Additionally an interactive feedback session was included in the training process.
4. Feedback session was held in small groups of 3 to 8 students.

Data Collection

Audio Visual

Speaking Activity Overall Visual Motion Head Nods

Prosody

Table 1: List of Nonverbal features extracted

Results

Correlation Analysis

1. Applicant cues
   
   (a) Participants who spoke often, longer, louder, with greater modulation of loudness and pitch obtained higher score in overall impression, professional, social and communicative skills.

   2. Interviewer cues
      
      (a) standard deviation of pitch, spectral entropy (min, lower quartile) and time derivative of energy (minimum) negatively associated with all social variables.

      (b) Overall visual motion (mean) positively associated with all social variables.

Regression Analysis

<table>
<thead>
<tr>
<th>Nonverbal Cues</th>
<th>Overall</th>
<th>English</th>
<th>French</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Overall Impression</td>
<td>0.244</td>
<td>0.347</td>
<td>0.589</td>
<td>0.458</td>
<td>0.443</td>
</tr>
<tr>
<td>Communication</td>
<td>0.228</td>
<td>0.237</td>
<td>0.231</td>
<td>0.458</td>
<td>0.352</td>
</tr>
<tr>
<td>Persuasive</td>
<td>0.231</td>
<td>0.221</td>
<td>0.231</td>
<td>0.238</td>
<td>0.245</td>
</tr>
<tr>
<td>Concise</td>
<td>0.148</td>
<td>0.148</td>
<td>0.148</td>
<td>0.148</td>
<td>0.148</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>0.458</td>
<td>0.347</td>
<td>0.458</td>
<td>0.352</td>
<td>0.443</td>
</tr>
<tr>
<td>Positive</td>
<td>0.231</td>
<td>0.231</td>
<td>0.231</td>
<td>0.238</td>
<td>0.245</td>
</tr>
<tr>
<td>Social</td>
<td>0.194</td>
<td>0.194</td>
<td>0.194</td>
<td>0.194</td>
<td>0.194</td>
</tr>
<tr>
<td>Competence</td>
<td>0.347</td>
<td>0.148</td>
<td>0.347</td>
<td>0.148</td>
<td>0.443</td>
</tr>
<tr>
<td>Hardworking</td>
<td>0.231</td>
<td>0.231</td>
<td>0.231</td>
<td>0.238</td>
<td>0.245</td>
</tr>
<tr>
<td>Motivated</td>
<td>0.291</td>
<td>0.291</td>
<td>0.291</td>
<td>0.291</td>
<td>0.291</td>
</tr>
</tbody>
</table>

Table 4: Regression results for overall, each language, and gender (p < 0.05, |p| < 0.05).

Changes across sessions

<table>
<thead>
<tr>
<th>Phase</th>
<th>Overall Impression</th>
<th>English</th>
<th>French</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.244</td>
<td>0.347</td>
<td>0.589</td>
<td>0.458</td>
<td>0.443</td>
</tr>
<tr>
<td>2</td>
<td>0.244</td>
<td>0.347</td>
<td>0.589</td>
<td>0.458</td>
<td>0.443</td>
</tr>
</tbody>
</table>

Table 5: Changes in overall impression ratings between lab session 2 and lab session 1

Conclusions

- Nonverbal behavior contribute to first impressions.
- Language has an effect on the predictive power of impressions scores.
- French language interviews showed higher prediction accuracy (R² = 0.32) than interviews which were conducted in only English (R² = 0.14).
- The nonverbal behavior affecting first impression is gender specific.
- Interviews with male participant were predicted with higher accuracy (R² ∈ [0.13, 0.46]) than the ones featuring females (R² ≤ 0.12).
- Feedback session had a positive effect on 2/3rd of the sample set, while it had a negative effect of 1/3rd.

References


Acknowledgements

This work was funded by the UBIMPRESSED project of the Sinergia interdisciplinary program of the Swiss National Science Foundation (SNF). Special thanks to Marianne Schmid-Mast and Denise Frauendorfer (Université de Lausanne) for collaboration on experimental design and data collection.