AniSAM & AniAvatar – Animated visualizations of affective states

Measuring and providing visual feedback about emotions has become increasingly important. While a great deal of effort has already been put into the reliable and accurate automatic detection of emotions (Scherer, 2005), very little is known about how this information about affective states should be displayed (Ku et al., 2005).

In the present study, two new animated feedback tools (AniSAM and AniAvatar) were evaluated and compared to existing static ones (OriginalSAM and MergedSAM). The tools were developed on the basis of an existing non-verbal questionnaire to assess two dimensions of emotion (i.e. valence and arousal) based on the circumplex model of affect (Russel, 1980).

Hypotheses:
(a) animated representations of affective (i.e. AniAvatar & AniSAM) states are more accurate in representing arousal than the static representations.
(b) the avatar representation is more accurate than the SAM for valence representation.

Manipulation check
(F_{arousal}(3, 469) = 16.94, p < .001, \eta^2_{partial} = .098; and F_{valence}(3, 469) = 3.6, p < .05; \eta^2_{partial} = .023; post-hoc tests: Tuckey’s HSD corrected).

Accuracy of affective feedback tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>M(arousal)</th>
<th>S.D(arousal)</th>
<th>M(valence)</th>
<th>S.D(valence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AniSAM</td>
<td>73 (28)</td>
<td>93 (32)</td>
<td>57 (14)</td>
<td>60 (16)</td>
</tr>
<tr>
<td>AniAvatar</td>
<td>75 (27)</td>
<td>95 (31)</td>
<td>61 (14)</td>
<td>67 (16)</td>
</tr>
<tr>
<td>MergedSAM</td>
<td>73 (28)</td>
<td>93 (32)</td>
<td>61 (14)</td>
<td>67 (16)</td>
</tr>
<tr>
<td>OriginalSAM</td>
<td>67 (28)</td>
<td>92 (30)</td>
<td>53 (14)</td>
<td>60 (16)</td>
</tr>
</tbody>
</table>

Feedback tools x vignettes

- Animated affective feedback tools (AniSAM and AniAvatar) more accurate in visualizing arousal.
- More accurate valence estimation for AniSAM.
- No difference between MergedSAM Original SAM combination of valence and arousal dimension has no negative effect on mood representation.
- Usefulness of the AniSAM and AniAvatar as effective feedback tools for affective states.

REFERENCES