The effect of individual differences on the positivity effect across the lifespan.

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Background
- The positivity effect (PE) is thought to be a response to shortening future horizons.
- The consequences of PE is that older adults pay more attention to and have better memory for positive stimuli.
- However, depression and sub-clinical low mood are also common in aging, and are associated with greater attention to negative stimuli.
- Few studies have considered the impact of individual differences on PE.
- We examine associations between individual differences and PE in two studies examining memory and attention.

Hypothesis
- Individual differences will influence presentation of PE.

Study 1: Memory – Methods
- Participants: 72 community dwelling adults (18-85 years)
- PE Memory: List-learning task containing 24 positive, negative and neutral words; presented and recalled 3 times.
- Positivity Score = Positive-Negative/Positive+Negative

Where Positivity Score >0 indicates positivity

Study 1: Results, Group differences

<table>
<thead>
<tr>
<th>Age (n=51)</th>
<th>No Positivity (n=21)</th>
<th>Group differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>45.92 (16.72)</td>
<td>42.81 (19.66)</td>
<td>F=4.64, p=.498</td>
</tr>
<tr>
<td>Sex (m,f)</td>
<td>25,26</td>
<td>9,12</td>
</tr>
<tr>
<td>Depression</td>
<td>3.57 (3.47)</td>
<td>4.95 (4.35)</td>
</tr>
<tr>
<td>Attitude to aging</td>
<td>6.92 (2.17)</td>
<td>6.05 (2.50)</td>
</tr>
</tbody>
</table>

- Individuals displaying positivity did not differ from those who did not on age, low mood, or attitude to aging.

Study 1: Results, Individual Differences
- Stepwise regression to explain Positivity Scores. Independent variables: age, Depression, Attitude to Aging.
- Only GDS was included and explained 15.2% (Beta=.389) of the variance in Positivity Score (F=12.52, p=.001).
- Beta weights for excluded variables: Age (Beta=.217, p=.058) and Attitude to Ageing (Beta=1.57, p=.179).

Study 2: Attention – Methods
- Participants: 25 older (>55 years) and 20 younger adults (18-30 years)
- PE Attention: Emotional Stroop Task. Participants responded to the words, ignoring the faces. An interference score was calculated for positive and negative words.
- Interference Score = Congruent stimuli – Incongruent stimuli

Where Interference Score >0 indicates interferences and Scores >0 indicate facilitation.

Study 2: Results, Group differences
- Older adults had significantly higher ERQ-Reappraisal than young adults (OA, M=5.71; YA, M=4.60; F=9.98, p=.003).
- Older adults had significantly lower education than young adults (see Table 2).
- No group differences on depression or ERQ-Suppression.

Table 2: Group demographics, mean (SD)

<table>
<thead>
<tr>
<th>Age (n=20)</th>
<th>Old (n=25)</th>
<th>Group differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.30 (2.94)</td>
<td>70.68 (10.31)</td>
<td>F=14.12, p=.001</td>
</tr>
<tr>
<td>Sex (m,f)</td>
<td>8,12</td>
<td>13,12</td>
</tr>
<tr>
<td>Education</td>
<td>2.75 (.712)</td>
<td>1.56 (1.56)</td>
</tr>
</tbody>
</table>

- A 2x2 (Age group x Interference Score valence) ANOVA revealed no significant effects for
  - age group (F=.512, p=.478),
  - valence of emotional words (F=.954, p=.334)
  - interaction effects (F=.356, p=.554).

Fig 1: Mean interference scores by valence and group

- ANCOVA controlling for individual differences did not substantially alter results.
- Controlling for ERQ-Reappraisal affected the main effect of valence but did not reach significance (F=3.87, p=.056).

Study 2: Results, Individual Differences:
- Older adults reporting less spontaneous reappraisal (r=.458, p=.021) and more emotional suppression (r=.430, p=.032) demonstrated more interference to positive words.
- Younger adults reporting higher emotional suppression demonstrated less interference to negative stimuli (r=-.468, p=.038).

Conclusion
- These studies show limited support for the PE with age.
- Individual differences in mood and emotional regulation style contribute to explaining PE.