Positions priming in briefly presented search arrays
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**Position and color priming in briefly presented search arrays**

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**Introduction**

In efficient visual search, *priming of pop-out* (PoP; Maljkovic & Nakayama, 1994, 1996) is usually reported as a speeded response when a target feature is repeated on consecutive trials.

**Feature facilitation accounts:** Sensitization to features via short-term memory. Priming at perceptual level.

**Post-perceptual accounts:** PoP affects response times, not accuracy, via response repetition benefits, decision bias or other "late" effects.

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**Results**

- A 2x2 within subjects analysis revealed significant main effects of position and color repetition (ps < 0.001 and 0.003, respectively). No interaction was found between the two (p=0.619).
- Position priming effects ranged from 2.5-11.4 pp, between subjects.
- Color priming effects ranged from 1.7-11.8 pp, between subjects.
- All subjects showed the same pattern of lowest accuracy under the "no-repetition" condition and highest accuracy under the "both repeated" condition. These within-subject differences ranged from 10-23 pp.

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**Conclusions**

- PoP affects accuracy at very brief exposures.
- The effects cannot be explained by reference to response related mechanisms.
- The results suggest a perceptual component in PoP. This does in not exclude response related PoP.
- A simple additive TVA model can be fitted quite well to experimental data.
- Recent literature suggests that repetition are the result of two or multiple mechanisms (see Lam & Yashar, in press; Kristjánsson & Campana, 2010).

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**References**


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**Figure 1:** (1) a trial (black arrow) and (2) between trial stimulus arrays (red arrow).

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**Figure 2:**

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Figure 2: Weight equation and rate equation.
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**Figure 3:**

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Figure 3: Exposure Durations vs. Mean Score.
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**Table 1:**

```
<table>
<thead>
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<th>Feature</th>
<th>C (fixed)</th>
<th>X (0-200)</th>
<th>alpha</th>
<th>C fix (0-1)</th>
<th>CR weight</th>
<th>Least Sq.</th>
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</thead>
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<td>6.6</td>
<td>0.19</td>
<td>0.8</td>
<td>0.84</td>
<td>0.0327</td>
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<tr>
<td>color</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

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**Equations (figure 2):**

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implified visual short-term memory
tory component in PoP. This does in not exclude response related PoP.
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**Acknowledgement:**

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