The adaptivity of aesthetic dimensions in the domains of art and design

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<table>
<thead>
<tr>
<th>Study</th>
<th>Adaptation duration</th>
<th>Delay (interval between adaptation and test)</th>
<th>Test duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webster and MacLin (1999)</td>
<td>5 min (+ 8 s top-up)</td>
<td>n/a</td>
<td>1 s</td>
</tr>
<tr>
<td>Leopold et al. (2001)</td>
<td>5 s</td>
<td>150, 300, 600, 1200, 2400 ms</td>
<td>200 ms</td>
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<tr>
<td>Rhodes et al. (2003)</td>
<td>5 min (+ 8 s top-up)</td>
<td>500 ms</td>
<td>1500 ms</td>
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<tr>
<td>Webster et al. (2004)</td>
<td>180 ms (+ 5 s top-up)</td>
<td>250 ms</td>
<td>unlimited</td>
</tr>
<tr>
<td>Carbon and Leder (2005)</td>
<td>30 s</td>
<td>4 s, 5 min</td>
<td>unlimited</td>
</tr>
<tr>
<td>Leopold et al. (2005)</td>
<td>1, 2, 4, 8, 16 s</td>
<td>-</td>
<td>100, 200, 400, 800, 1600 ms</td>
</tr>
<tr>
<td>McKone et al. (2005)</td>
<td>160 s</td>
<td>15 min</td>
<td>n/a</td>
</tr>
<tr>
<td>Carbon and Leder (2006)</td>
<td>30 s</td>
<td>80 min</td>
<td>n/a</td>
</tr>
<tr>
<td>Carbon et al. (2007b)</td>
<td>~ 36 min</td>
<td>5 min, 24 hours</td>
<td>unlimited</td>
</tr>
<tr>
<td>Rhodes et al. (2007)</td>
<td>1, 2, 4, 8, 16 s</td>
<td>1000 ms</td>
<td>200, 400, 800, 1600, 3200 ms</td>
</tr>
<tr>
<td>Kovacs et al. (2007)</td>
<td>500 ms, 5 s</td>
<td>500 ms</td>
<td>200 ms</td>
</tr>
<tr>
<td>Kloth and Schweinberger (2008)</td>
<td>1 min 24 s (+ 3.5 s top-up in the first test block)</td>
<td>0 to 10 min</td>
<td>400 ms</td>
</tr>
<tr>
<td>Carbon &amp; Ditye (in press)</td>
<td>30 s</td>
<td>1 week</td>
<td>days</td>
</tr>
</tbody>
</table>

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First conclusion

- Clear long-term adaptation effects
- Seem to have a representational basis
Research question

- Might adaptation effects be helpful in explaining (and predicting) effects of
  - Fashion cycles?
  - Design trends?
  - Art epochs?
Innovation cycles: BMW “5-series”

(Carbon, 2010, Acta Psychologica)
Study on design trends

- Clear cycle of preference, linked with curvature

(Carbon, 2010
Acta Psychologica)
Study on design trends

• Why did we like
  – ultra-round design in the 1950s
  – loved angular design in the 1970s & 1980s
  – preferred curved design in the beginning of 21\textsuperscript{st} century
  – ...and are now on a hybrid angular-curved trend?
Adaptation study on design trends

• Adaptation to highly innovative car designs ("Simulation of future visual habits")
Adaptation study on design trends

- Evaluations
  - No adaptation
  - After adaptation

(Carbon, 2010
Acta Psychologica)
Adaptation study on design trends

• Adaptation as plausible mechanism for triggering fashion or design trends
  – Increase of preference towards newly inspected stimuli
  – Devaluation of familiar stimuli (regarding innovativeness, liking, etc.)
Adaptation on artistic style

- Long-term trends can also be found in fine arts, architecture, music, etc.
  - “Art epochs”
  - “Art eras”
Adaptation on artistic style

- Stimulus demands for experimental testing of adaptation effects on art perception
  - Need for unique artistic styles which could be used as adaptors
  - Evaluation set must contain more or less parts of the idiosyncratic attributes of the adaptors
Adaptation on artistic style

• Paintings of Amedeo Modigliani (1884 – 1920)
  • idiosyncratic depictions of humans
  • typical style: mannerist elongation of faces and bodies
Adaptation on artistic style

• Procedure
  1) T1: Evaluation of paintings from many art periods
  2) Adaptation (Modiglianis)
  3) T2: as in T1

• Material
  • Evaluation set: 8 paintings from 5 centuries of Western art history
  • 11 levels of elongation
  • Adaptation set: 8 Modiglianis
Adaptation on artistic style

- Results
  - $N = 50$

**Aggregated data:**

Curve fittings on individual data: still very high: $R^2 = .86$

(Carbon et al., 2007, *Perception-S*)
Adaptation on artistic style

• Results
  – Clear adaptation effect towards idiosyncratic mannerist style of Modigliani

• Further results
  – Modulation by similarity (with Modiglianis)
    • The more similar, the stronger the adaptation effects
  – Modulation by familiarity
    • The more familiar, the weaker the adaptation effects
Adaptation on artistic style

- Extensions
  - Compatible effect with adaptation phase employing paintings by Fernando Botero

- No clear adaptation effects with artistic styles mimicking ...
  - Impressionism
  - Fauvism
  - Pointillism
Conclusions

- Adaptation effects in the described cases seem to be representationally based (e.g., Carbon et al., 2007a; Carbon & Ditye, in press)

- Adaptation effects might be one essential basis for triggering design, fashion and even artistic trends (e.g., Carbon et al., 2007b; Carbon, 2010)
References

- Carbon, C. C. (2009). What "exactly" is a prototype? Not sure, but average objects are not necessarily good candidates for... *Perception, 38*(5).
Abstract

Personal taste develops over time and is highly susceptible for Zeitgeist-dependent effects. Using an adaptation paradigm from the face adaptation literature (Carbon & Ditye, in press; Webster & MacLin, 1999), we could show in a series of experiments that not only the representation of artworks (Carbon & Leder, 2006), but also taste quickly adapts towards adaptors (Carbon, Ditye, & Leder, 2006). One of these experiments made use of the idiosyncratic style of Amedeo Modigliani who employed manneristic face elongation. In the first part of the experiment, the pre-adaptation phase (T1), participants were asked to rate their liking of a number of portraits by various artists of a variety of different historical epochs on a seven-point Likert-scale. Each portrait was presented in 11 different versions which differed in the amount of compression or extension in heights (cf. Carbon et al., 2007). This block was followed by an adaptation-phase in which Modigliani’s paintings were shown. In a succeeding test-phase, the post-adaptation phase (T2), liking of the same paintings of T1 was rated again by the participants. Results revealed systematic changes in aesthetic appreciation for those exemplars that were structurally rather similar in the style to Modigliani (the extended versions). The talk qualifies and discusses such style-based adaptation effects by comparing them with long-term adaptation effect in the domain of product design research (Carbon, 2010) to reveal their common cognitive basis.

Keywords: Aesthetics; Design; Formensprache; Gestalt; Adaptation; Art and vision; Zeitgeist

References: