**Visual Attractiveness is leaky (2): Face and Hair**

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**Introduction**

**MOTIVATION**
* Emotion is non-selective.
* If so, would emotional evaluation trespass object border?
* How exactly attractiveness may be leaky, misattributed, or implicitly imported to a different object?

**Visual Attractiveness is leaky**
1) Face & geometric figures. Effects from surround/memory.
2) Face & hair. Effects of task & attention.

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**Experiment**

**Subjects**
- m=31 (17 males and 14 females)

**Stimuli**
- 8 faces, generated by Facemaker
  - 4 races: African/Asian/European/Indian, 2 attractiveness: high/low for each race
  - 16 hairs, prepared by using Instyle.com
  - 4 colors: light blonde/dark blonde/brown/brunette, 2 lengths: long/short, 2 shapes: straight/wave
- Composites of face and hair, prepared by using Instyle.com
  (full combination of 8 faces and 16 hairs)

**Experiment design**

Section 1:
- Task: to evaluate attractiveness of face on a 7-point scale
- Stimuli: 16 hairs and 128 composites of face & hair

Section 2:
- Task: to evaluate attractiveness of face on a 7-point scale
- Stimuli: 8 faces and 128 composites of face & hair

Section 3:
- Task: to evaluate attractiveness of total, including both hair and face on a 7-point scale
- Stimuli: 8 faces and 128 composites of face & hair

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**Main Findings of the Previous Study**
- Preference as a function of experience (Shimojo et al., VSS’07, 108; PNAS in press)

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**Objectives**

1) How is attractiveness leaky in the context of face & hair?
2) How is face perceptually processed with hair?

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**Predictions based on (quasi) linear integration:**

- FC(subject)NS(target) – most attractive.
- FC(subject)NS(target) – least attractive.

- Results:
  1. Attractiveness of whole image: FC(subject)NS(target) – (quasi) linear integration
  2. Attractiveness of FC only: FC(subject)NS(target) – ???

**Attractiveness is leaky (& non-linear)?**

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**Paradoxical Relationship Between Dwell Time and Leakage**

Subjects followed instructions adequately. gaze data

In the face task
- gaze entirely in the face

In the hair task
- gaze more in the hair, but not exclusively

**Attractiveness Leakage**

Hair attractiveness was influenced by face attractiveness
Attractiveness pattern of faces was directly imported to hair.

**Face attractiveness was influenced by hair attractiveness**
Attractiveness pattern of hair was NOT imported to face.

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**Conclusions**

1) Attractiveness is leaky.
2) Attractiveness pattern of face was directly imported to hair attractiveness, but that of hair was not (Face-Hair asymmetry).
3) The less paying attention to the surround, the more implicit influence.
4) There is a common attractiveness “template,” i.e. a representation of parameters determining attractiveness, across object categories.

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**Hypothetical Parameter Space for Attractiveness Leakage**

- Quasi-linear
- Holistic
- Non-linear

**Selective Leakage**
- Non-Selective
- Attractiveness
- Task
- Attractiveness

**Implicit effects can operate below the awareness threshold.**