INTER-FEATURE TRANSFER OF AFTEREFFECTS: EVIDENCE FOR ADAPTATION IN WHOLE FACE REPRESENTATIONS

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INTRODUCTION

Upright faces may use a holistic mechanism, but inverted faces may only be processed in a part-based manner.

PURPOSE: Use a novel inter-feature adaptation paradigm to explore if face representations are holistic.

STRATEGY: Does adapting to one-half of a face create aftereffects in the perception of the identity of the other half?
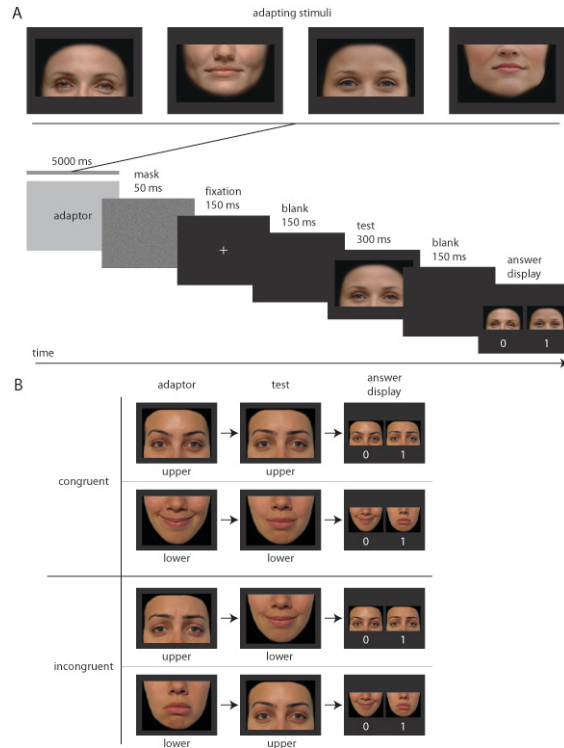
Congruent conditions = within feature adaptation
Incongruent conditions = inter-feature adaptation

METHODS & RESULTS

Original (unmorphed) half-faces used as adapting stimuli.
Fantamorph 3.0 (www.fantamorph.com) generated morphed faces between two identities, for test stimuli.
All adapting and test face stimuli segmented into upper and lower halves.

EXPERIMENT 1 – IDENTITY AFTEREFFECTS

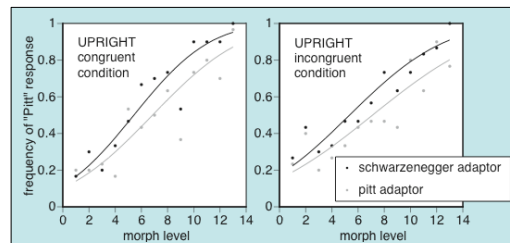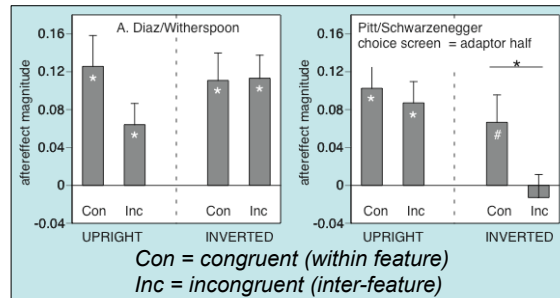A. Colour images of Cameron Diaz vs. Reese Witherspoon
   • 15 subjects
B. Greyscale images of Brad Pitt vs Arnold Schwarzenegger
   • 15 subjects
• Choice screen matched adapting stimulus
• Orientation blocked

Con = congruent (within feature)
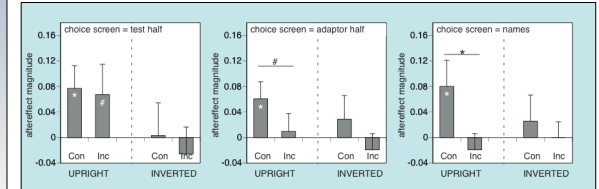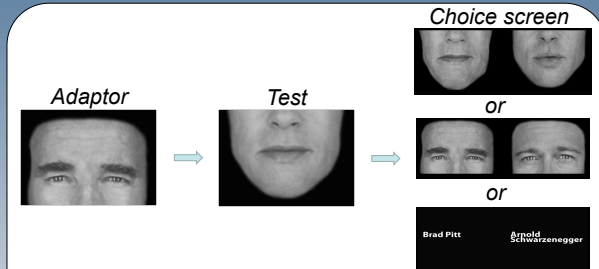*Inc = incongruent (inter-feature)*

EXPERIMENT 2 – EFFECT OF CHOICE SCREEN

• Greyscale images of Brad Pitt vs. Arnold Schwarzenegger
• 15 subjects
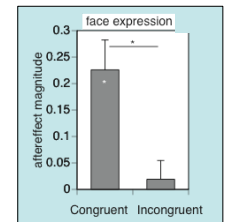• Three different choice screens – adapting half, test half, or written names
• Choice screen, orientation blocked

EXPERIMENT 3 – EXPRESSION AFTEREFFECT

QUESTION: Does inter-feature adaptation transfer occur for some other face property than identity?

• Happy vs. sad images of one female subject in NimStim Database of Emotional Faces
• 16 subjects

DISCUSSION

• Inter-feature transfer *can* (but does not reliably) occur in the adaptation of identity in representations of upright faces, consistent with representations in which upper and lower faces are integrated.
• Insufficient evidence regarding transfer for inverted faces (within-feature adaptation too weak)
• Facial expression did not show any evidence of inter-feature transfer of aftereffects. This raises the question as to whether expression information is more part-based.