Focus on physical growth

IIE 366: Developmental Psychology

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Lecture 10

I. Physical Attractiveness

A. Who Is? Who Isn't? How Do We Decide?

B. How Does Attractiveness Affect A Child's Development?

II. Lack of Sleep

A. Studies of extreme sleep deprivation

B. Studies of early school start

C. A more realistic study: Sadeh et al. (2003)

III. Studying Brain Function

A. Electroencephalography (EEG)

B. Functional magnetic resonance imaging (fMRI)

I. Physical Attractiveness

A. Who is? Who Isn't? How Do We Decide?

B. How Does Attractiveness Affect A Child's Development?

True or false: Beauty is in the eye of the beholder.

True or false: Beauty is only skin deep.

Answers: Both false.

Who Is Attractive? Why?

- Some ideas: Youthfulness, symmetry
- More recent evidence: "Average"
- Is "beauty in the eye of the beholder"? No.

Facial beauty

- Average faces are almost always beautiful

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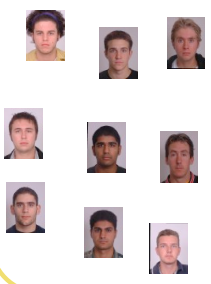
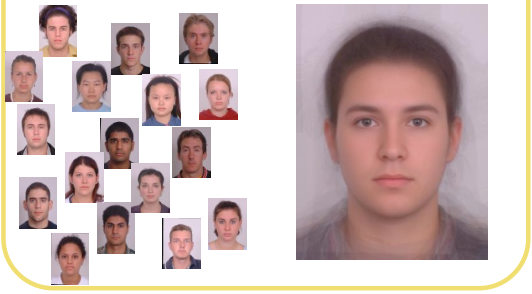
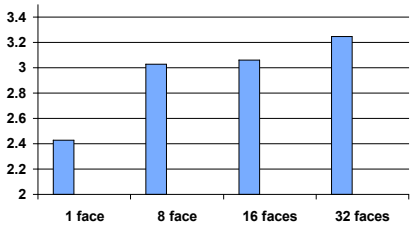


Facial beauty

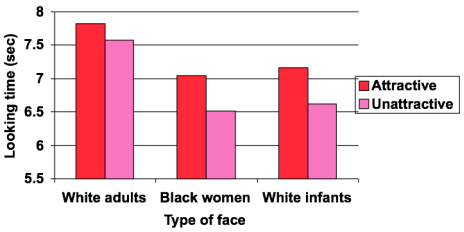
- Average faces are almost always beautiful
- http://www.faceresearch.org/demos/average



Langlois & Roggman (1990) Results for "Liking"



Langlois et al. (1991) results for infants' looking at faces

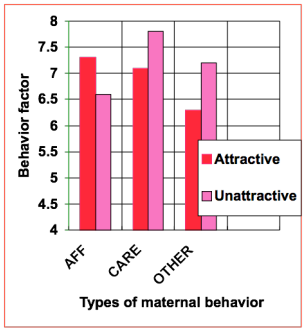


How Does Attractiveness Affect A Child's Development?

- By age 5, physically attractive children are more popular, in part because they are less aggressive toward others and, instead, interact more positively.
- More attractive children are also more successful in school.

Langlois et al. (1995) study of mothers and newborns

- Mothers treat attractive babies differently.
  - More affection interaction
  - Less routine care giving
  - More attention to others
- Both for newborns and for 3-month olds (attractiveness rated by undergraduates)



II. Lack of Sleep

Elementary-school age children need about 9 hours of sleep each night. What are the consequences of reduced sleep?

Sleep

- Sleep is essential for growth since 80% of growth hormone is secreted during sleep
- Many children do not get enough sleep
  - Around 25%
- Children must be taught how to fall asleep
  - Nighttime rituals help

Age	Total Sleep	Night Sleep	Number Naps
1 week	16-1/2 hours	8-1/2 hours	4
1 month	15-1/2 hours	8-3/4 hours	3
3 months	15 hours	9-3/4 hours	3
6 months	14-1/4 hours	11 hours	2
9 months	14 hours	11-1/2 hours	2
12 months	13-3/4 hours	11-1/2 hours	2
18 months	13-1/2 hours	11-1/2 hours	1
2 years	13 hours	11-1/2 hours	1
3 years	12 hours	11 hours	1
4 years	11-1/2 hours		
5 years	11 hours		
6 years	10-3/4 hours		
9 years	10 hours		
12 years	9-1/4 hours		
15 years	8-3/4 hours		
18 years	8-1/4 hours		

Source: *Solve Your Child's Sleep Problems*, Richard Ferber, Simon&Schuster, 1985

A. Studies of extreme sleep deprivation (e.g., only 4 hours) show reduced attention and alertness.

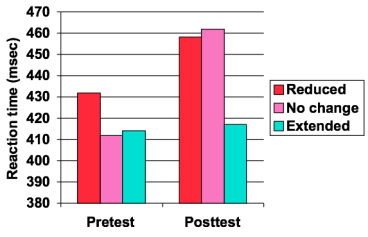
B. Studies of early school start times show poorer concentration and inattention.

C. A more realistic study: Sadeh et al. (2003)

- Studied 9- to 12-year-olds in Israel over 5-day period.
- For first two days, children sleep normally
- For last three days,
  - some children sleep normal amounts
  - others get 30+ minutes of extra sleep
  - still others get 30+ less sleep.

C. Sadeh et al. (2003)

- Children with reduced sleep duration report improved sleep quality (fewer nighttime wakings)
- Children with increased sleep duration report poorer sleep quality (more nighttime wakings)
- However, shorter sleep duration leads to more reports of fatigue the following evening
- These differences of sleep duration also lead to behavioral effects
  - Measured attention (in the morning) before and after changed sleeping patterns.

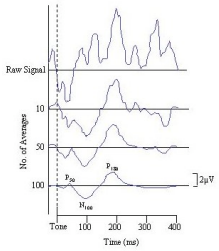


III. Studying Brain Function

A. Electroencephalography (EEG)

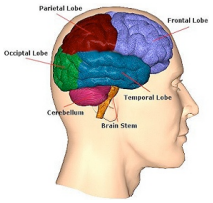
B. Functional magnetic resonance imaging (fMRI)

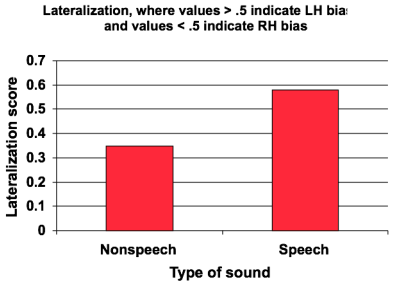
A. EEG



Molfese et al. (1975)

- Studied 6-month-olds
- Repeated (100X) presentations of syllables (e.g., "ba") or nonspeech sounds (e.g., music, "white noise")
- Recorded electrical activity in the left and right temporal regions of the brain.

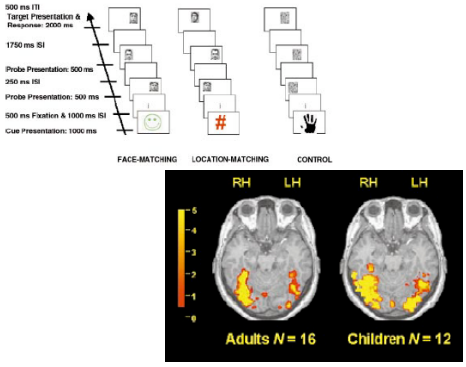




fMRI

- Provides a "direct" measure of brain activity.
- Based on change in magnetic properties of oxygenated versus deoxygenated blood.
- Produces a "map" of brain regions "consuming" large amounts of oxygen.

Work by Joan Stiles on face processing in the temporal lobe



Summary

1. Physical attractiveness: Beauty is neither in the eye of the beholder nor skin deep. There are widespread standards of facial attractiveness that have consequences for development.
2. Cumulative loss of even small amounts of sleep can make children less attentive.
3. EEG and fMRI techniques show that the brain is organized early in development.

Next time

- Perceptual development
- Methods of measuring infant perception