

Short Course On Facial Recognition and Decoding Facial Expressions

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Problems Remembering Faces



- **Prosopagnosia**: Inability to recognize faces, even one's own face.” (p. 1168)

Taber's (1981). Taber's Cyclopedic Medical Dictionary. Philadelphia, PA:F.A. Davis

- **Joaachim Bodamer, M.D. 1947**: German soldiers with brain injuries who could no longer see faces. Coined term. “*Prosopon*” meaning face + “*agnosia*” meaning nonrecognition from Greek.

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, **18** (4), 68-73.

Subtypes of Prosopagnosia



- **Acquired Prosopagnosia:** Caused by insult to the brain; what Bodamer wrote about in 1947.
- **Developmental Prosopagnosia:** “...characterized by severely impaired face recognition. Individuals with this disorder, which runs in families, have no history of brain damage and intact early visual systems.” (p. 166)

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Duchaine, B.C. and Nakayama, K. (2006). Developmental Prosopagnosia: A Window to Content –Specific Face Processing. Current Opinion in Neurobiology, 16, 166-173.

Developmental Prosopagnosia



“Developmental prosopagnosics (DPs) have not suffered any obvious brain damage, yet they have deficits in face recognition that can be as severe and as selective as those seen in acquired prosopagnosics.” (P. 166)

Duchaine, B.C. and Nakayama, K. (2006). Developmental Prosopagnosia: A Window to Content –Specific Face Processing. Current Opinion in Neurobiology, 16, 166-173.

Subtypes of Prosopagnosia



- Possible Associated Conditions:
 - Problems with recognition of facial expression of emotion
 - Problems with gender of face discrimination
 - Problems with age of face discrimination
 - Problems with **TOPOGRAPHAGNOSIA**: difficulty with personal navigation; getting lost easily
 - Asperger's Disorder

Galaburda, A.M. and Duchaine, B.C. (2003). Developmental Disorders of Vision. Neurologic Clinics, 21 (3), 687-707.

Subtypes of Prosopagnosia



- Possible Associated Conditions:
 - Central Auditory Processing Disorder (CAPD):
“The inability to understand spoken language in a meaningful way in the absence of what is commonly considered a hearing loss.” (Sineps and Hunter, 1997)

Duchaine, B.C. (2000). Developmental Prosopagnosia with Normal Configural Processing. Cognitive Neuroscience and Neuropsychology. 11 (1), 79-82.

Choisser, B. (August, 14, 2007). Face Blind! From website: www.choisser.com/faceblind/about.html, p. 7 of 10.

Sineps, D. and Hunter, L. (1997). I Can Hear But...When Auditory Perception and Listening Break Down: Implications For Language and Reading. Paper presented at the International Dyslexia Association Annual Conference, Minneapolis, MN, November 13, 1997, Session T-45.

Prosopagnosia



- Remembering Faces:
 - This is an important ability for survival.
 - It lets you know “friends and foes.”
 - It helps you maintain relationships.
 - It helps you remember the social status of others.

Ratey, J.J. (2001). A User's Guide to the Brain: Perception, Attention and the Four Theaters of the Brain. New York, NY: Vintage.

Developmental Prosopagnosia



- Affects 2 to 3 percent of the population
- That equates to 6,000,000 Americans!
- Those affected often know something is wrong, but they don't know exactly what.

Goldberg, C. (June 14, 2006). When Faces Have No Name. The Boston Globe. From website: www.boston.com/yourlife/health/diseases/articles/2006/06/14/when_faces_have_no_name/

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Symptoms of Prosopagnosia



- Extreme difficulty recognizing faces. Even with a person who is well known by the sufferer (i.e., a parent, spouse, best friend, etc.).
- Appears aloof/arrogant, does not respond to people they “know” when they see them.
- Often complain they cannot follow movies or TV shows because they cannot remember the identity of characters.
- They tend to recognize people by hair, gait, clothing, voice, context or other information.

Author (August 14, 2007). www.faceblind.org/research, p. 1 of 3.

Developmental Prosopagnosia



- “The hereditary type of prosopagnosia has an autosomal dominant type of inheritance. This means that men and women are affected in equal numbers. In our experience women are more willing to talk about their face recognition problems, though.” (Thomas Grueter, M.D.)
- If one parent has Prosopagnosia their child has a 50% chance of having it.

Grueter, T. (August 14, 2007). Personal Communication.

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Kennerknerht, I., Grueter, T., Wellinh, B, Wentzek, S, Horst, J., Edwards, S. and Gueter, M. (June, 2006). First Report of Prevalence of Non-Syndromic Hereditary Prosopagnosia. American Journal of Medical Genetics, Part A, 140A (15), Pages 1617-1622 (From abstract).

How to Assess Developmental Prosopagnosia



- Cambridge Face Memory Test
- Test My Face Recognition- Internet test

Duchaine, B. and Nakayama, K. (2006). The Cambridge Face Memory Test: Results for Neurologically Intact and an Investigation of It's Validity Using Inverted Face Stimuli and Prosopagnosic Participants. Neuropsychologia, 44, pp. 576-585. From web site: www.faceblind.org/people/duchaine06neuropsychologia.pdf#search=%22Cambridge%20Face%20Memory%20Test%22 .

Test My Face Recognition (From web site): www.faceblind.org/index.php



Treatment of Prosopagnosia



- “Prosopagnosics cannot be cured, but they can and do learn ways to recognize people.”
(p. 70)

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Treatment of Prosopagnosia: "Are you my Mother?"

- Encourage the person to look at people's faces when socializing.
- Introduce new people slowly and emphasize their characteristics: "Say hi to Billy with the red hair and freckles."
- Have children meet teachers long before school starts and have the child meet with them often.
- Have teachers keep their appearance "stable".
- Play introduction games.
- Post photos of teachers, friends, parents on wall.

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American Mind, 18 (4), 68-73.

Mnemonic Techniques to Remember Faces

- Lucas, J. (2000). Names and Faces Made Easy: The Fun Way To Remember People. Lucas.
- www.jerrylucas.com



Prosopagnosia of Facial Expressions



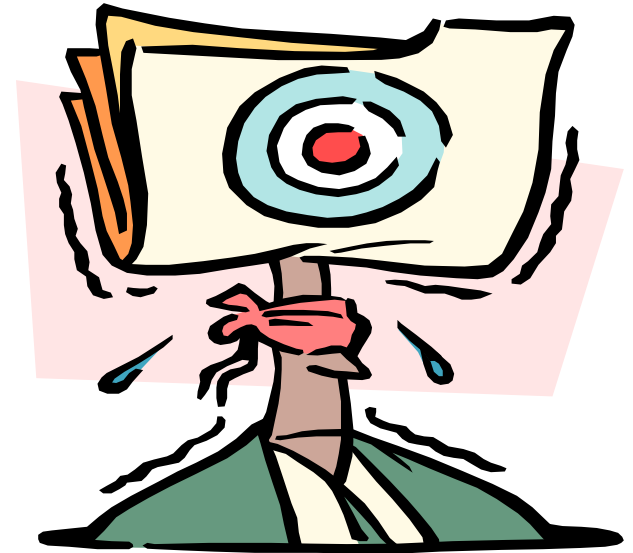
Prosopagnosia of Facial Expressions



“Face perception can be subdivided into two general types – recognition of person identity via the structures of the face, and recognition of internal affective state of the shape of individual features and changes in their relative distance from one another during the expression.” (p. 128)

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

Recognizing Emotional Facial Expressions

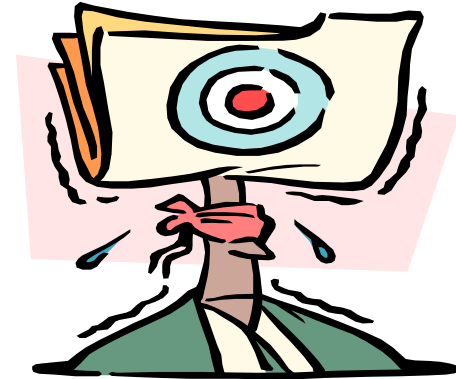


- Emotional Facial Expression Recognition:
 - “Does this mean we come into the world expecting to see human faces and ready to respond with our own prewired facial expressions? Yes!” (Ratey, 2001, p. 300)

Ratey, J. J. (2001). A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain. New York: NY: Vintage.

Decoding Skill and Facial Expression

- Positive emotions are the easiest to decode.
- Negative emotions are the most difficult.
- Poor interpreters of facial expression have less social acceptance and poorer adjustment.



Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. Perspectives, 29 (2), p. 20-22.

Assessment for Face Perception

- **Reading The Mind In The Eyes Test**: Screening test for problems interpreting facial expressions.

Baron-Cohen, S. (2003). The Essential Difference. New York, NY: Basic Books, pp. 197-199.

- Research versions of the “Eyes Test”
 - **Adult Eyes Test (Instructions, Part 1 and Part 2)**
 - **Child Eyes Test (Instructions, Part 1 and Part 2)**
 - **Faces Test**

Downloadable from: www.human-emotions.com/mindreading/default.asp

FACE READING ASSESSMENT

- **Comprehensive Affect Testing System (CATS)**

“This ensemble of tests enables clinical psychologists, neuropsychologists, neurologists, educators, speech therapists and other related disciplines to assess dysfunctional processing of affect expressed by the human face and voice.” (p. 1 of 4)

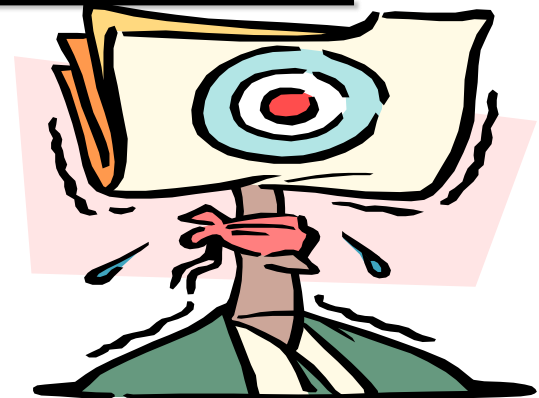
Froming, K., Levy, M. and Ekman, P. (2003).

www.psychologysoftware.com/testing_instruments.htm

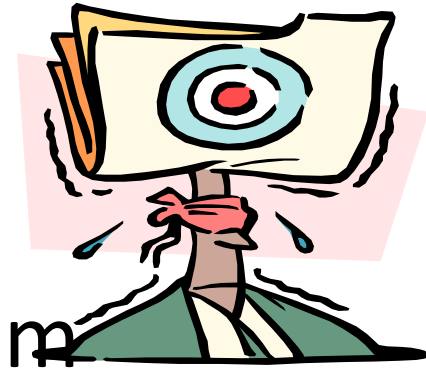
Treating Problems Reading Facial Expressions

- Volkmar, F. (April 23, 2003). Asperger Syndrome: Clinical Features, Assessment, and Intervention Guidelines. Seminar presented by the New England Educational Institute, Phoenix, AZ.
- Gauthier, I. and Tarr, M.J. (1997). Becoming a “Greeble” Expert: Exploring Mechanisms for Face Recognition. Vision Research, 37 (12), 1673-1682.

• **FACIAL EXPRESSIONS CAN BE TAUGHT!**



Treating Problems Making & Reading Facial Expressions

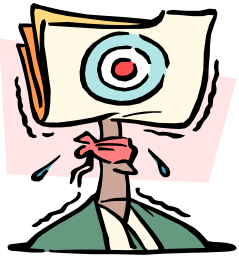


- “Gaining Face” computer program (www.ccoder.com/GainingFace/)
- Paul Ekman CD-ROMs (www.paulekman.com)
- Simon Baron-Cohen: “Mind Reading – An Interactive Guide to Human Emotions (CD-ROM)”; www.human-emotions.com/mindreading/default.asp

Treating Problems Reading and Making Facial Expressions

Micro Expression Training Tool (METT) CD

– Available from: www.emotionsrevealed.com



- “In under an hour you will learn how to recognize very brief expressions (1/5 of a second).” The METT trains one to recognize the 7 universal emotions: enjoyment, fear, surprise, sadness, contempt, anger and disgust.

Subtle Expression Training Tool (SETT) CD

– Available from: www.emotionsrevealed.com

Treating Problems Reading and Making Facial Expressions

- Ekman, P. & Friesen, W.V. (2003). Unmasking The Face: A Guide To Recognizing Emotions From Facial Cues. Cambridge, MA: Malor Books.
- Ekman, P. (2003). Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life. New York, NY: Time Books.

Appendix: Face Reading-The Test

- Available from: www.paulekman.com