Developmentally Disconnected: Evidence-Based Tools for Transforming Social Competence

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Workshop Manual Layout Workshop Slides (p. 1 - 133) > Helpful Resources: Books, websites, etc. (p. 134-159) > Appendixes (p. 150-169) Workshop Evaluation and scantron directions (End of Manual)

Seminar Updates

 Updates of this seminar, new information on Autism Spectrum Disorders, Specific Learning Disorders, and AD/HD can be found at:

www.drkevintblake.com



Website "Slides"

DSM-5



When a Slide has the word "WEBSITE" written in brackets followed by a number as you see on this slide to the right

This means if you want to know more about this subject you can go to my website

(<u>www.drkevintblake.com</u>), click on the "Seminar Update" link and look up the slide with the corresponding number.

*→***(Website-1)**

- DSM-5 Became available in May 2013
- Writing began in 2007
- It is not a cutting edge manual for Specific Learning Disorder, AD/HD and ASD
- Author (May 18, 2013). <u>Diagnostic and Statistical Manual of</u> <u>Mental Disorders, Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 67-69.
- Author (2010). <u>DSM-5 Development</u>. Washington, DC: American Psychiatric Association; <u>www.dsm5.org/Pages/Default.apsx</u>
- Author (May 1, 2012). An Attention Deficit/Hyperactivity Disorder-Rationale: Rationale for Changes in ADHD in DSM-5 From the ADHD and Disruptive Behavior Disorders Workgroup. From website:

http://www.dsm5.org/ProposedRevision/Pages/proposedr evision.aspx?rid=383#.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Three Appendixes in This Manual

Appendix 1: Using CBT with AD/HD and/or ASD Individuals – page: 150-154 Appendix 2: Dogs and Social Interaction –

page: 154-157

Appendix 3: More on Flirting - page: 157-169

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"Road Rules" and What To Expect

- 9:30 AM to 9:40 AM Break
- 11:30 AM to12:30 PM Lunch On Your Own
- 2:00 PM to 2:10 PM Break
- > 3:30 PM Conclusion

I have 396 slides to present.



PLEASE TURN OFF YOUR CELL PHONES AND PAGERS

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Another Group of Professionals that Attend My Workshops

Thieves!

- Do not let your valuables out of your sight!
- If you leave your seat take your laptops, cell phones, purses, etc. with you!



THE BIG QUESTION?

- Skill: A behavior that is learned from the environment.
- Ability: A behavior that is biologically encoded in the brain.



Social Ability

"One of the areas lacking in understanding social competence is the evaluation of social abilities. It is possible that the child can have difficulty in his/her understanding of social interaction, the child's perception of facial expressions, voice intonation and gestures, his/her ability to remember, organize and retrieve information about social interactions, and/or the social skills themselves." (p. 40)

Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, p. 40.

What is a "Disorder"?



A disorder is a *harmful dysfunction* of a naturally selected mechanism.

Wakefield, J.C. (1999). Evolutionary Versus Prototype Analysis of the Concept of Disorder. Journal of Abnormal Psychology, <u>108</u> (3), pp. 374-399.

 It must cause a dysfunction in a trait every human develops and create impairment in a major life activity.

Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford, p. 86, 92-93.

What is a "Developmental Disorder"?

- It is disorder characterized by a significant delay in the rate a normal human trait develops in an individual.
- It takes the individual longer to develop this trait than their age peers.

Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford., P. 92-93.

DSM-5 (Website-1)



- DSM-5 Became available in May 2013
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- Author (2010). <u>DSM-5 Development</u>. Washington, DC: American Psychiatric Association; <u>www.dsm5.org/Pages/Default.apsx</u>
- Author (May 1, 2012). An Attention Deficit/Hyperactivity Disorder-Rationale: Rationale for Changes in ADHD in DSM-5 From the ADHD and Disruptive Behavior Disorders Workgroup. From website:

http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

What does "Neurobiological" mean?

 Stephen Pinker – "The Blank Slate: The Modern Denial of Human Nature" or better stated, "the Lie of the Blank Slate."

Pinker, S. (2002). <u>The Blank Slate: The Modern Denial of Human Nature</u>. New York, NY: Viking.

• AD/HD is not caused by child rearing practices or environmental experience.

Barkley, R. A. (2002A-Tape 1). <u>ADHD Symposium: Nature, Diagnosis and</u> <u>Assessment-Nature and Comorbidity and Developmental Course of ADHD</u>. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

What does "Neurobiological" mean?

- 65 to 75% of the cases of AD/HD are caused by genetic anomalies.
- These people with ADHD are said to have "developmental ADHD."

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

- 80 to 85% of the variance of those with developmental ADHD is genetic.
- I.Q. is 60 to 65% genetic.

Barkley, R. A. (2002A-Tape 1). <u>ADHD Symposium: Nature, Diagnosis and Assessment-Nature</u> <u>and Comorbidity and Developmental Course of ADHD</u>. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

What does "Neurobiological" mean? (WEBSITE: 2)

 Russell Barkley, Ph.D. (2008) said regarding Combined Type AD/HD, "You cannot train out this disorder, period!" He went on to state the counselor is a "shepherd" of a disabled person.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.



"Acquired AD/HD"



- 25 to 35% of cases of AD/HD are acquired/caused by brain trauma
- 15 to 25% of cases of AD/HD are acquired/caused by pre-natal and perinatal brain injuries: Maternal smoking/drinking, premature birth, etc.
- 3 to 7% of cases of AD/HD are acquired/caused by post- natal brain injuries: head trauma, infections, tumors, lead poisoning, PANDAS, etc.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

"Acquired" AD/HD

- Most of those with "acquired" ADHD are males.
- The male brain is more prone to injury and genetic difficulties than the female brain.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis</u> <u>and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.



What does "Neurobiological" mean?

- 1. Damage to different neural networks may cause AD/HD symptoms.
- 2. Differences in Brain Development may cause them, too (more common).
- 3. AD/HD, "... is a condition of the brain produced by genes."
- 4. AD/HD has multiple causes
- Swanson, J. and Castellanos, X. (1998). <u>Biological Basis of Attention Deficit Hyperactivity Disorder:</u> <u>Neuroanatomy, Genetics, and Pathophysiology</u>. Available fromhttp://addbalance.com/add/nih/19981118c.htm.
- Biederman, J. (October 27, 2006). <u>Advances in The Neurobiology of AD/HD</u>. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.
- Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

AD/HD is <u>NOT</u> new!



German physician Melchior Adam Weikard first described what we now call AD/HD in 1775.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

What Does "Neurobiological" Mean?

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Pinker, S. (2002). <u>The Blank Slate: The Modern Denial of Human Nature</u>. New York, NY: Viking.

 "Although learning disabilities (specific learning disorder, sic.) may be exacerbated by other variables, such as ineffective teaching strategies or socioeconomic barriers, this paper supports the position that the essence of learning disabilities is neurobiological in nature." (p. 61)

Fiedorowicz, C., et.al. (2001). Neurobiological Basis of Learning Disabilities. <u>Learning</u> <u>Disabilities</u>, <u>11</u> (2), pp. 61-74.

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What Does "Neurobiological" Mean?

"Of particular relevance to this review is the compelling evidence in support of the neurobiological basis of learning disabilities. Studies employing widely divergent methodologies, e.g. research using genetic analysis, neuroanatomical neuroimaging, electrophysiological recording, pathological analysis of brain tissue at autopsy, and neuropsychological evaluation have yielded highly convergent conclusions in support of a neurobiological etiology." (p. 70)

Fiedorowicz, C., et.al. (2001). Neurobiological Basis of Learning Disabilities. <u>Learning Disabilities</u>, <u>11</u> (2), pp. 61-74.

Specific Learning Disorder with Impairment in Reading/"Dyslexia" is <u>NOT</u> new!

Sally Shaywitz (2003) Reported that Rudolf Berlin a physician from Stuttgart, Germany wrote of "dyslexia" in 1887.

Shaywitz, S. (2003). <u>Overcoming</u> <u>Dyslexia</u>. New York, NY: Knoff.



What does "Neurobiological" mean? (WEBSITE: 3)

- 60% of Specific Learning Disorder with Impairment in Reading/Dyslexia is genetic.
- Specific Learning Disorder with Impairment in Math/ Dyscalculia is highly genetic (60 to 70%) in twin studies.

SLD 5% to 15% Children; 4% Adults

- Willcutt, E.G. and Gaffney-Brown, R. (Summer, 2004). Etiology of Dyslexia, ADHD and Related Difficulties: Using Genetic Methods to Understand Comorbidity. <u>Perspectives</u>, <u>30</u> (3), pp. 12-15.
- Klingberg, T. (2013). The Learning Brain: Memory and Brain Development in Children. New York, NY: Oxford University Press.

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 70.

What Does Neurobiological Mean? (WEBSITE: 4-6)



- "At present, however, the existing data argue strongly for a role of the amygdala and its collaborating cortical systems in the pathobiology of autism spectrum conditions." (p. 197)
- Schultz, R.T., Romanski, L.M. and Tsatsanis, K.D. (2000). Neurofunctional Models of Autistic Disorder and Asperger Syndrome: Clues from Neuroimaging. In A. Klin, F.R. Volkmar and S.S. Sparrow (Eds.), <u>Asperger Syndrome</u>. New York, NY: Guilford, pp. 178-209.
- "The field has come a long way since parents were considered to be the cause of autism spectrum disorders." (p. 64)
- Ozonoff, S., Dawson, G. and McPartland, J. (2002). <u>A Parent's Guide to Asperger Syndrome & High Functioning</u> <u>Autism</u>. New York, NY, Guilford.
- Kaiser, M.D., et al. (November 15, 2010). Neural Signatures of Autism. <u>Proceedings of the National Academy of Sciences of the United States of America (PNAS)</u>. <u>7(107)</u>, 21,223-21228._doi: 10.1073/pnas.1010412107. Epub 2010 Nov 15.

Centers for Disease Control and Prevention

• "Autism (Spectrum Disorder, sic) is known to be a genetic disorder, at least in part." (p. 2 of 3)

Author (No Date). Fact Sheet: Study to Explore Early Development (SEED). Center for Disease Control and Prevention. From website: <u>http://www.cdc.gov/ncbddd/autism/states/new/CADDRE%20Fact%20Sheet%20July%202007.pd</u> <u>f</u>.

 Centers for Autism and Developmental Disabilities Research and Epidemiology (CADDRE) Network: "The CADDRE Network is currently working on the Study to Explore Early Development (<u>SEED</u>) – a five-year, multi-site collaborative study to help identify factors that may put children at risk for autism spectrum disorders (ASDs)."

Centers for Disease Control and Prevention, Autism Information Center, Centers for Autism and Developmental Disabilities Research and Epidemiology. From website:

http://www.cdc.gov/ncbddd/autism/caddre.htm.

ASD Heritability

"Heritability estimates for autism spectrum disorder have ranged from 37% to higher than 90%..." (p. 57).

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 57.

Autism Spectrum Disorder is <u>NOT</u> New!

"People have probably lived with what we know today as autism spectrum disorders throughout history. Some of the earliest published descriptions of behavior that sounds like autism date back to the 18th century. But the disorder did not have a name until the middle of the 20th century."

Centers for Disease Control and Prevention. Autism Information Center. <u>http://www.cdc.gov/ncbddd/autism/overview.htm#is</u>

ASD's Prevalence

"For 2008, the overall estimated prevalence of ASDs among the 14 ADDM sites was 11.3 per 1,000 (one in 88) children aged 8 years who were living in these communities during 2008" (p. 1)

 Baio, J. (March 30, 2012). Prevalence of Autism Spectrum Disorders — Autism and Developmental Disabilities Monitoring Network, 14 Sites, United States, 2008.
 Baltimore, MD: Centers for Disease Control and Prevention, 1-19. From website: <u>http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm?s_cid=ss6103a1</u> <u>w</u>.

The Plastic Brain



"One study examined the structure of the brain in a group of subjects before and after a threemonth course in juggling. What the scientists found was that an area in the occipital lobe specializing in the perception of motion grew over this period, but three months after training stopped it had shrunk again, and lost roughly half the increase previously induced by training".

Klingberg, T. (2009). <u>The Overflowing Brain: Information Overload and The Limits of</u> <u>Working Memory</u>. New York, NY: Oxford University Press.

Limits to Brain Plasticity



"Neuroplasticity enables the brain to compensate for damage, but sometimes an area of the brain is so extensively damaged that its natural ability to reorganize is insufficient to regain the lost function. In the case of Huntington's Disease and other diseases that cause neuronal death, the death of many cells may render the brain unable to reorganize corrective connections. In order to have a chance of repair, a certain (as yet unknown) number of neurons must remain intact. Thus, if a highly specialized brain "circuit" is completely destroyed, the associated mental function may be lost. **Currently there is no way of determining with certainty** whether a lost function can be recovered".

Hammond, K. (June 26, 2010). <u>Neuroplasticity</u>. Hunnington's Outreach Project for Education at Stanford (HOPES). From website: <u>http://www.stanford.edu/group/hopes/cgi-</u> <u>bin/wordpress/2010/06/neuroplasticity/#the-limits-of-innate-brain-plasticity</u>.

What is a "Disability?"



- With adults the term disability has become a legal term of art since the passage of the American's with Disability Act (ADA).
- One must be impaired compared to the Average American.
- Highly Controversial

Gordon, M. and Keiser, S. (Eds.) (1998). <u>Accommodations in Higher Education</u> <u>Under the Americans with Disabilities Act: A No-Nonsense Guide for</u> <u>Clinicians, Educators, Administrators, and Lawyers</u>. New York, NY: Guilford.

Americans with Disabilities Act, Amendment Act of 2008 (WEBSITE: 7-15)

The new act makes it easier for a person to establish they have a disability. It directed the U.S. Equal Opportunity **Employment Commission to redefine the term "substantially** limits." The list of "major life activities" was expanded to include reading, bending, walking, communicating, etc. The bill included bodily functions like difficulties with the immune system, bowel functions, etc. If a person has 20/20 vision while wearing glasses they are now still considered disabled. People with "episodic disabilities" are now better protected.

Equal Opportunity Employment Commission: <u>www.eeoc.gov/laws/statutes/adaaa_notice.cfm</u>.



Ways Social Interactions Influence Physical Health

- Social Support: Stress Buffering-Reduces the stressful event by promoting less threatening interpretation of the event.
- Social Integration: Main Effect-Promotes positive psychological states, social motivation and pressure to care for oneself.
- Negative Interactions: Relationships as a Source of Stress-Elicits psychological stress and increases risk for disease.

Cohen, S. (November, 2004). Social Relationships and Health. <u>American Psychologist</u>, <u>59</u> (8), pp. 676-674.

What is Social Competence?

"Social competence is an ability to take another's perspective concerning a situation and to learn from past experience and apply that learning to the ever-changing social landscape. The ability to respond flexibly and appropriately defines a person's ability to handle the social changes that are presented to us all." (p. 1-2)

Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, pp. 1-2.
Social Competence and Health

"There is sufficient empirical evidence that links social competence to mental and physical health...It has been linked to such varied disorders as anxiety, cardiovascular disease, juvenile delinquency, and substance abuse, to name a few." (p. 1)

Semrud-Clikeman, M. (2007). Social Competence in Children. New York, NY: Springer.

Skills of Social Emotional Competence

- Awareness of own emotional state
- Awareness of other's emotional state
- Emotional use of words
- Ability to cope with emotional distress
- Ability to attend to the reaction of others

Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. <u>Perspectives</u>, <u>29</u> (2), p. 20-22.
Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer.

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Emotional Competence

"Thus, children with ASD might not appreciate physiological cues associated with emotional states that might facilitate their regulation of emotion" (p. 149).

Scarpa, a, Reyes, N., and Attwood, T. (2013). Cognitive-Behavioral Therapy for Stress and Anger management in Young Children with ASD. White, S.W., Scahill, S., and Ollendick, T.H. (2013). Multimodal Treatment for Anxiety and Social Skills Difficulties in Adolescents on the Autism Spectrum. . In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Specific Learning Disorder and Social Skills

"Reviews of the literature indicate that approximately 75% of the children with learning disabilities also experience problems with social skills." (p. 76)



Semrud-Clikeman, M. (2007). <u>Social</u> <u>Competence in Children</u>. New York, NY: Springer, p. 76.

Ostracism and the Brain (WEBSITE: 16-21)

- "No matter how people are left out their response is swift and powerful, inducing a social agony that the brain registers as physical pain." (p. 32)
- "All social animals use this form of group rejection to get rid of burdensome group members. In nonhuman animals, an unaccepted member usually ends up dead.

Williams, K.D. (January/February, 2011). The Pain of Exclusion. <u>Scientific American Mind</u>, <u>21</u> (6), 30-37.

Specific Learning Disorder, Social Skills & Work



- "...social skills deficits can be the most debilitating part of the learning-disabled experience." (p. 201)
- "Failure at 'office politics' can lead to being fired. Many people with learning disabilities, at high or low levels, reach a plateau and are unable to advance for reasons of personal matching." (p. 201)
- Poor social skills are the reason for under-employment in many with LD.
- Brown, D.S. and Gerber, P.J. (1994). Employing People with Learning Disabilities. In P.J. Gerber and H. B. Reiff (Eds.), <u>Learning Disabilities in Adulthood: Persisting Problems and Evolving Issues</u>. Austin, TX: Pro-Ed, pp. 194-203.
- McLoughlin, D., Fitzgibbon, G. and Young, V. (1994). <u>The Adult Dyslexic: Assessment, Counseling and Training</u>. San Diego, CA: Singular.



AD/HD and Employment

- 80% of AD/HD children suffer social rejection by second grade.
- Impulsivity?
- Barkley, R.A. (2008). <u>Advances in</u> <u>ADHD: Theory, Diagnosis and</u> <u>Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.



AD/HD and Employment



• Difficulty with others is one of the main reasons AD/HD adults loose their jobs.



Ratey, N. and Griffith-Haynie, M. (1998). <u>Coaching to Improve Workplace Performance</u>. Paper presented at the Fourth Annual ADDA Adult ADD Conference, March 26-28, Washington, DC.

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AD/HD and Employment (WEBSITE: 22-23)



 One-half of AD/HD adults are unemployed.

Biederman, J. (October 27, 2006). <u>Advances in The Neurobiology of</u> <u>AD/HD</u>. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.



Social Disorders



- AD/HD Combined Type men married less, reported interpersonal and sexual problems, had general difficulties with socialization, difficulties with heterosocial responses and problems with assertiveness (Weiss and Hechtman, 1993)
- Those with AD/HD often have problems with emotional regulation. This causes problems, too.
- Weiss, G. and Hechtman, L.T. (1993). <u>Hyperactive Children Grown Up (Second Edition)</u>. New York, NY:Guilford.
- Canu, W.H. and Carlson, C.L. (April, 2004). ADHD and Social Adaptation From Childhood to Adulthood. <u>ADHD Report</u>, <u>12</u> (2), pp. 1-6.

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Social Disorders



- Men with Inattentive Presentation (Restrictive) AD/HD were rated more negatively by women than men with Combined Type AD/HD and those without AD/HD as potential dates.
 - AD/HD, Inattentive men are less talkative, less assertive and started dating later.
 - Less desire to continue interaction by women

Canu, W.H. and Carlson, C.L. (April, 2004). ADHD and Social Adaptation From Childhood to Adulthood. <u>ADHD Report</u>, <u>12</u> (2), pp. 1-6.

Social Disorders



Regarding Nonverbal LD Ozonoff, et.al. (2002) wrote, "Many children with NLD have trouble reading the emotions of others and have other social difficulties..." (p. 162)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). <u>A Parent's Guide to Asperger</u> <u>Syndrome & High Functioning Autism</u>. New York, NY: Guilford.

Learning Disorders

Rourke broke down Learning Disorders into two groups: Basic Rhonolog cal Processing Disorders 2. Nonverbal Learning Disorders

Rourke, B.P. (2006). <u>Question #1: You refer to NLD as a subtype of Learning</u> <u>Disabilities (LD). How do you define LD?</u> From Website: www.nldbprourke.ca/BPRA1.html

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Nonverbal Learning Disorders (NVLD)

- Five to ten percent of the LD population has NVLD.
- Sixty percent of those with NVLD have comorbid AD/HD
- "Social Competence Disorder"

Semrud-Clikeman, M. (October 26, 2006). <u>AD/HD and Co-morbidity: Aspergers,</u> <u>Autism Spectrum and Nonverbal Learning Disabilities</u>. Paper presented at the Pre-Conference Institutes of the 18th Annual CHADD International Conference, Chicago, IL.

Social (Pragmatic) Communication Disorder 315.39 (F89.89)

"...individuals who have significant problems using verbal and nonverbal communication for social purposes, leading to impairments in their ability to effectively communicate, participate socially, maintain social relationships, or otherwise perform academically or occupationally."

Closest diagnosis to NVLD in DSM-5?

Author (May, 2013). <u>Social (Pragmatic) Communication Disorder, Fact Sheet</u>. Washington, DC: American Psychiatric Association. From website: <u>http://www.dsm5.org/Documents/Social%20Communication%20Disorder%20Fa</u> <u>ct%20Sheet.pdf</u>.

Brain Differences in NVLD Children



"Following segmentation of the corpus callosum, the NLD group was observed to have significantly smaller splenia compared to all other groups. Smaller splenia in the NLD group was associated with lower WASI PIQ scores but not WASI VIQ scores. Children with HFA were observed to have larger midbody areas than children with NLD and neurotypically developing children. Children with HFA and NLD demonstrated behavioral symptoms of inattention and hyperactivity similar to the ADHD groups indicating that corpus callosum differences seen in the NLD and HFA groups are not related to these behaviors".

Fine, J.G., et al. (November12, 2013). Smaller splenium in children with nonverbal learning disability compared to controls, high-functioning autism and ADHD. <u>Child Neurology</u>, DOI: 10.1080/09297049.2013.854763.

ASD's Central Difficulty

"Regardless of the diagnosed person's global intelligence, savant-like talents, verbal ability, or mechanical giftedness, social difficulties are the primary source of impairment for most people with ASD and central to the diagnostic criteria of ASD" (p. 124).*

*White, S.W., Scahill, S., and Ollendick, T.H. (2013). Multimodal Treatment for Anxiety and Social Skills Difficulties in Adolescents on the Autism Spectrum. . In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Klin, A. (2001). <u>Autism, Asperger's and the PDD Spectrum</u>. Seminar presented at the 33rd Annual Arizona Association of School Psychologists Conference, "Across the Spectrum", October 11 and 12, 2001, Mesa, AZ.

Autism Spectrum Disorders



 Klin and Volkmar said of adults with Mild (Level 1) Autism Spectrum Disorder, "Unless issues of social presentation and competence are adequately addressed, including what to do in specific situations such as lunch or free-time periods, the chances of vocational satisfaction are lessened." (p. 351)

Klin, A. and Volkmar, F.R. (2000). Treatment and Intervention Guidelines for Individuals with Asperger Syndrome. In A. Klin, F. Volkmar and S.S. Sparrow (Eds.), <u>Asperger Syndrome</u>. New York, NY: Guilford, pp. 340-366.

Social Interaction



"...traditional psychologists and neurologists have been slow to acknowledge that social behavior is at least in part a brain function just like memory or language." (p. 296)

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



- Rosen and Bartak broke down social interaction into three parts (which are intertwined):
 - Social Perception: The ability to perceive social interactions.
 - Social Interpretation: How we understand social interaction after it is perceived.
 - <u>Social Skills</u>: Emotional, cognitive, verbal and nonverbal ways we socially behave.

Rosen, W. and Bartak, J. (2002). <u>Distinguishing Features of Social Deficits in</u> <u>Children with Neurobiological Disorders</u>. Learning Disabilities Association International Conference, January 15, 2002 Denver, CO.



Many of us are so well wired to pick up proper social behavior intuitively, we have overlooked those who don't and need explicit training in social interactions and have viewed them as just misbehaving.

<u>"Neurosocial Disorders"</u> = "Social Learning Disabilities"

Rosen, W. and Bartak, J. (2002). <u>Distinguishing Features of Social Deficits</u> <u>in Children with Neurobiological Disorders</u>. Learning Disabilities Association International Conference, January 15, Denver, CO.



With Neurosocial Disorders you must match etiology to treatment.

Rosen, W. and Bartak, J. (2002). <u>Distinguishing Features of Social Deficits in Children with</u> <u>Neurobiological Disorders</u>. Learning Disabilities Association International Conference, January 15, Denver, CO.

- When treating such disorders you want to start treatment where the breakdown occurs.
 - Encoding
 - Representation
 - Generating Responses
 - Decision Making



 Semrud-Clikeman, M. (October 26, 2006). <u>AD/HD and Co-morbidity: Aspergers, Autism</u> <u>Spectrum and Nonverbal Learning Disabilities</u>. Paper presented at the Pre-Conference Institutes of the 18th Annual CHADD International Conference, Chicago, IL.
 Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer.

Subtypes of Social Difficulties

AD/HD typically associated with ppositional Defiant Disorder or induct Disorder Autism Spectrum Disorder AD/HD only

Voeller, K.S. (1994). Techniques for Measuring Social Competence in Children. In R.G. Lyon (Ed.), <u>Frames of Reference for the</u> <u>Assessment of Learning Disabilities: New Views on Measurement</u> <u>Issues</u>. Baltimore, MD: Paul H. Brookes, pp. 523-554.

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(Website: 24-31)

Attention-Deficit/Hyperactivity Disorder

Specify based on current presentation— 314.01 (F90.2) Combined Presentation 314.00 (F90.0) Predominately Inattentive Presentation 314.01 (F90.1) Predominately Hyperactive/Impulsive Presentation





- > Need to have symptoms prior to age 12.
- 18 Symptoms of AD/HD child and adult equivalents
- 9 symptoms of Inattention: Need 6 for significance (may need only 5 if over age 17)
- ➢ 9 symptoms of Hyperactivity/Impulsivity: Need 6 for significance (may need only 5 if over age 17)

DSM-5



Other Specified Attention-Deficit/Hyperactivity Disorder 314.01 (F90.8):

This,"...category is used in situations in which the clinician chooses to communicate the specific reason the presentation does not meet criteria for..." AD/HD (p. 65-66).

DSM-5



- Unspecified Attention-Deficit/Hyperactivity Disorder (314.01) (F90.9):
- This,"...category is used in situations in which the clinician chooses not to specify the reason that the criteria are not met for..." AD/HD (p. 66).
- This may the best place to place AD/HD, Inattentive Presentation (restrictive) (AKA) Sluggish Cognitive Tempo (SCT) (AKA) Crichton Syndrome (AKA) Concentration Deficit Disorder (CDD)

DSM-5



> Severity will be specified:

- Mild: Few if any symptoms over cutoff; minor impairments in occupational & social functioning
- Moderate: Impairment between "Mild" and "Severe" presentation
- Severe: Many symptoms in excess of cutoff; marked impairment socially and occupationally

Resources

- Author (May 18, 2013). <u>Diagnostic and Statistical Manual of</u> <u>Mental Disorders, Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 59-66.
- Author (2010). Attention-Deficit/Hyperactivity Disorder. Washington, DC: American Psychiatric Association: <u>http://www.dsm5.org/ProposedRevision/Pages/proposedrevision</u>. <u>aspx?rid=383</u>.
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8– 10, 2012.
- Barkley, R.A. (November, 2013). A plea to Rename Sluggish Cognitive Tempo (SCT) as Concentration Deficit Disorder. <u>The</u> <u>ADHD Report</u>, <u>21(7)</u>, 1-4.

DSM-5 Digression (WEBSITE: 32-35)



Types of High Functioning Autism, Autism, Autism Spectrum Disorder, Asperger's Disorder, PDD, PDD-NOS:

1. Autism Spectrum Disorder

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 50-59.

Author (2010). <u>Asperger's Disorder</u>. Washington, DC: American Psychiatric Association;

www.dsm5.org/Proposed/Revisions/Pages/proposedrevision.apx?rid=97#.

Author (2010). Autistic Disorder. Washington, DC: American Psychiatric Association;

www.dsm5.org/Proposed/Revisions/Pages/proposedresisions.apsx?rid=94.

Autism Spectrum Disorder

Note: Individuals with well established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) disorder.

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders,</u> <u>Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 51.

Autism Spectrum Disorder

> Specifiers

- With or without accompanying intellectual impairment
- > With or without accompanying language impairment
- With catatonia
- Associated with a known medical or genetic condition or environmental factor
- Associated with another neurodevelopmental, mental, or behavioral disorder

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental</u> <u>Disorders, Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 51-59.

Autism Spectrum Disorder

> Three Levels of Severity:

- > Level 3, Requiring very substantial support
- > Level 2, Requiring Substantial Support
- Level 1, Requiring Support

Not all those with ASD have intellectual disability.

Prenatal exposure to valproate acid may cause ASD

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders,</u> <u>Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 51-59.

Social Learning Disabilities



- LD children are less socially competent and less well liked.
- Typical social cognitive problems:
 - Interpretation and perception of faces, tone of voice, gesture and body language

Poor at social inference and poor social judgment

Wren, C. (2000). <u>Hanging By A Twig</u>. New York, NY: Norton.

Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, pp. 76-77.

DSM-5 Digression (WEBSITE: 36-43)

Specific Learning Disorder

- > With impairment in reading:
 - >Word reading accuracy

➢ Reading rate or fluency

Reading comprehension



- Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.
- Author (July, 2012). An Insightful Q&A with Dr. Larry Silver: An Inside Look At DSM-5. Pittsburg, PA: Learning Disabilities Association of America. From Website: <u>http://www.ldanatl.org/legislative/pubs/120820_DSM-5_Q-A_with-Larry-Silver.pdf</u>.
- Colker, R., Shaywitz, S., Shaywitz, B., Simon, J.A., (No Date) <u>Comments on Proposed DSM-5</u> <u>Criteria for Specific Learning Disorder from a Legal and Medical/Scientific Perspective</u>. Yale Center for Dyslexia and Creativity. From Website: <u>http://dyslexia.yale.edu/CommentsDSM5ColkerShaywitzSimon.pdf</u>.

Grohol, J.M. (December 5, 2012). Final DSM Approved by American Psychiatric Association. <u>World of Psychology: PsychCenteral</u>. From website: <u>http://psychcentral.com/blog/archives/2012/12/02/final-dsm-5-approved-by-american-</u>

psychiatric-association/.
DSM-5 Specific Learning Disorder with Impairment In Reading:

Note: Dyslexia is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities. If dyslexia is used to specify this particular pattern of difficulties, it is also important to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders,</u> <u>Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 67. DSM-5 Specific Learning Disorder with Impairment In Written Expression

315.2 (F81.81) Specific Learning Disorder

With impairment in written expression:

- Spelling accuracy
- Grammar and punctuation accuracy

Clarity or organization of written expression

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.

DSM-5 Specific Learning Disorder with Impairment In Mathematics

- **315.1 (F81.2) Specific Learning Disorder** With impairment in mathematics:
- Number sense
- Memorization of arithmetic facts
- Accurate or fluent calculation
- Accurate math reasoning

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.

DSM-5 Specific Learning Disorder With Impairment In Mathematics

Note: *Dyscalculia* is an alternative term used to refer to a pattern of difficulties characterized by problems processing numerical information, learning arithmetic facts, and performing accurate of fluent calculations. If dyscalculia is used to specify this particular pattern of mathematic difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with math reasoning or word reasoning accuracy.

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders,</u> <u>Fifth Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.

DSM-5 Specific Learning Disorder Information

- Specific Learning Disorder can be Mild, Moderate, or Severe in impairment.
- Specific learning disorder may also occur in individuals identified as intellectually "gifted." (p. 69).
- Those with an I.Q lower than 65 would not be considered as having Specific Learning Disorder.

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.



Author (May 18, 2013). <u>Diagnostic and</u> <u>Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 66-74.

Brain Areas Related to Social Interaction

Schultz and Klin (in press) indicated the following brain areas control the following social behaviors:

Frontal lobe: Theory of mind and social perception

Hypothalamus: Maternal behavior



<u>Amygdala</u>: Arousal, emotional learning, social orienting, recognition of emotional significance

Fusiform gyrus: Face perception

<u>Temporal lobe</u>: Interpretation of biological movement, recognition of facial expressions

 Schultz, R.T. & Klin, A. (in press). Social Systems of the Brain: Evidence From Autism and Related Disorders. <u>Philosophical Transitions of the Royal</u> <u>Society, Series B.</u> (taken from: Ozonoff, S., Dawson, G. and McPartland, J. 2002. <u>A Parent's Guide to Asperger Syndrome & High-Functioning Autism</u>. New York, NY: Guilford, p. 58)

Brain Areas Related to Social Interaction



- Voeller believed all the above mentioned systems are located in their own specific brain areas.
- Impairment in one area does not necessarily mean impairment in other areas.
- Voeller, K.S. (1995). Clinical Neurological Aspects of the Right-Hemisphere Deficit Syndrome. <u>Journal of Child Neurology</u>, <u>10 (Supplement Number 1)</u>, pp. S16-S22.

Emotional Intelligence



- Lane wrote, "Emotional Intelligence may be broadly defined as the ability to use emotional information in a constructive and adaptive manner." (p. 2)
- Lane, R.L. (2000). Neural Correlates of Conscious Emotional Experience. In R. Lane, L. Nadel, G. Ahern, J. Allen, A. Kazniak, S. Rapcsak and G. Schwartz (Eds.), <u>Cognitive Neuroscience of Emotion</u>. New York, NY: Oxford University Press, pp. 345-370.

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Emotional Intelligence

- Daniel Goleman stated that emotional intelligence is intricately imbedded in the human neuroanatomy.
- Goleman, D. (1997). <u>Emotional</u> <u>Intelligence: Why It Can Matter More</u> <u>Than IQ</u>. New York, NY: Bantam.





Emotional Intelligence

A prerequisite for empathy is an awareness of one's own emotions.

Lane, R.L. (2000). Neural Correlates of Conscious Emotional Experience. In R.
L. Lane, L. Nadel, G. Ahern, J. Allen, A. Kazniak, S. Rapcsak and G. Schwartz (Eds.), <u>Cognitive Neuroscience of Emotion</u>. New York, NY: Oxford University Press, pp. 345-370.



Emotional Intelligence



- AD/HD Children live a lifetime of social rejection.
- Around 80% of Combined Type ADHD children are socially rejected because of poor social skills by 2nd grade.
- AD/HD children often are not aware of their poor social skills and blame others for their problems.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

Simon Baron-Cohen and Emotional Intelligence (WEBSITE: 44-47)

- Autism Spectrum Disorder may be an extreme form of the biological male personality.
- Males are into Systematizing (S), or understanding things.
- Females are into *Empathizing (E)*, or understanding people.



- Those with Autism (mostly males) are weak in or lack *Empathizing*, but are strong in *Systematizing*.
- The E-S Spectrum

Baron-Cohen, S. (2003). The Essential Difference. New York, NY: Perseus.

Dyslexia and Gender (Website: 48-50)



- Sally Shaywitz (1996) reported:
 - Women's brains appear to have bilateral phonological processing.
 - This may explain why women tend to have fewer language deficits after left brain strokes.
 - It may also explain why more women than men compensate for Specific Learning Disorder with impairment in reading: dyslexia.

Shaywitz, S.E. (1996). Dyslexia. <u>Scientific American</u>, <u>275</u> (5), pp. 98-104.

AD/HD and Gender



AD/HD girls suffer socially more than AD/HD boys.

- Quinn, P. O. and Nadeau, K.G. (2002). <u>Gender Issues and AD/HD</u>. Silver Spring, MD: Advantage.
- Goldstein, S. and Gordon, M. (August, 2003). Gender Issues and ADHD: Sorting Fact From Fiction. <u>ADHD Report</u>, <u>11</u> (4), 7-11, 16.
- Langer, H. (2002). Role Expectations. In P.O. Quinn and K.G. Nadeau (Eds.), <u>Gender</u> <u>Issues and AD/HD</u>. Silver Spring, MD: Advantage, pp. 70-80.

Asperger's and Gender



- Girls and women with Autism Spectrum Disorder suffer more socially that boys and men with Autism Spectrum Disorder.
- Attwood, T. (2007). <u>The Complete Guide for Asperger's Disorder</u>. Philadelphia, PA: Jessica Kingsley.
- Hully, C. and Larmar, S.A. (2006). Asperger Syndrome in Adolescent Females. <u>International Journal of Learning</u>. <u>13</u> (3), p. 1-6. From Website: <u>http://www98.griffith.edu.au/dspace/bitstream/10072/14167/1/40458.pdf</u>.



- Three things make humans behaviorally different from all other species:
 - Our capacity to delay our response to our environment (Bronowski, 1977).
 - Our capacity for compassion (Leakey, 1995).
 - Our capacity for long-term compassion (Grandin, 1995).
 - Bronowski, J. (1977). <u>Human and Animal Languages: In a Sense of Future</u>. Cambridge, MA: MIT Press. pp. 104-131.
 - Leakey, R. (1995). Speech given to the National Press Club, Washington, DC, Played on National Public Radio.
 - Grandin, T. (1995). <u>Thinking In Pictures: And Other Reports From My Life With</u> <u>Autism</u>. New York, NY: Vintage.

Kinder, Gentler, T-Rex

 There is now evidence that some dinosaurs nested and raised offspring similar to modern birds. Hence, they had some capacity for compassion.

Horner, J. (2000). Dinosaur Reproduction and Parenting. <u>Annual Review of Earth and</u> <u>Planetary Sciences</u>, <u>28</u>, p. 19-45.





"The findings command attention, as the bonobo is just as close to us as its sibling species, the chimpanzee. According to DNA analysis, we share over 98 percent of our genetic profile with each of these two apes...the genetic makeup of a chimpanzee or bonobo matches ours more closely than any other animal...In terms of family resemblance, only two options exist: either we are one of them or they one of us." (p. 5)

DeWaal, F. and Lanting, F. (1997). <u>Bonobo: The Forgotten Ape</u>. Berkley, CA: University of California Press, p. 5.

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"In the summer of 1982 Kat was newly pregnant and Washoe doted over her belly, asking about her BABY. Unfortunately, Kat suffered a miscarriage. Knowing that Washoe had lost two of her own children, Kat decided to tell her the truth. MY BABY DIED, Kat signed to her. Washoe looked down to the ground. Then she looked into Kat's eyes and signed CRY, touching her cheek just below the eye. When Kat had to leave that day, Washoe would not let her go. PLEASE, PERSON HUG, she signed." (Fouts, 1997; **Edwards**, 2000)

Fouts, R. (1997). Next of Kin: My Conversations with Chimpanzees.

New York, NY: William Morrow.

Edwards, M. (Spring, 2000). Book Review. <u>The Harvard Brain</u>. From website: hcs.harvard.edu/~husn/BRAIN/vol7-spring2000/fouts.htm.



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- Bonobo: Pan paniscus
 - Shares 98% of its genetic profile with humans.
 - They have been compared to australopithecines
 - "In physique, a bonobo is as different from a chimpanzee as a Concorde is from a Boeing 747."
 (p. 3 of 14)

DeWaal, F.B.M. (March 1995). Bonobo Sex and Society. <u>Scientific American</u>. pp. 82-88. From Website: <u>http://primates.combonobos/bonobosexsoc.html</u>.

Bonobo: Pan Paniscus







The dominate male bonobo at the Great Ape Trust in Iowa, Kanzi, can communicate by using 348 symbols and knows the meaning of up to 3000 words!

Raffaele, P. (November, 2006). The Smart and Swinging Bonobo. <u>Scientific American</u>. <u>37</u> (6), pp. 66-75.

Bonobos & Vasopressin



"Interestingly, this same polymorphic microsatellite in the human AVPR1A that has been associated in autism is absent in the common chimpanzee, but present in the bonobo. Bonobos are known for high levels of psychosexual reciprocity and they appear to use sexuality to promote social reconciliation as well as social bonding within the group. Therefore, it is intriguing to consider that as in voles, variations in unstable microsatellite sequences in the promoters of the primate vasopressin receptor may contribute to species difference in expression and social behaviour, as well as to individual differences in social behaviour." (p. 2195)

Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. <u>Philosophical Transactions of the Royal Society of Biological</u> <u>Sciences</u>, <u>361</u> (1476), pp. 2187-2198. From Website: <u>http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849</u>.

Chimpanzee, Bonobos, Humans & Vasopressin



"Similar genetic variation in the human AVPR1A may contribute to variations in human social behavior including extremes outside the normal range of behavior and those found in autism spectrum disorders." (p. 2187)

Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. <u>Philosophical Transactions of the Royal Society of Biological</u> <u>Sciences</u>, <u>361</u> (1476), pp. 2187-2198. From Website: <u>http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849</u>

Chimpanzee, Bonobos, Humans & Vasopressin



"Our two closest primate cousins – chimpanzees and bonobos –also have different lengths of this gene, which match their social behaviors. Chimpanzees, who have the shorter gene, live in territorially based societies controlled by males who make frequent, fatal war raids on neighboring troops. Bonobos are run by female hierarchies and seal every interaction with a bit of sexual rubbing..."

Chimpanzee, Bonobos, Humans & Vasopressin



"...they are exceptionally social and have a long version of the gene. The human version of the gene is more like the bonobo gene. It would seem that those with the longer version of the gene are more socially responsive. For example, this gene is shorter in humans with autism..." (p. 74)

Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Teco, The Autistic Bonobo Toddler



- Recently the researchers at the Great Ape Trust in Iowa report that an 18 month old male bonobo toddler shows significant signs of autism spectrum disorder.
- Additionally recent research has demonstrated that the bonobo social brain is much more similar to that of humans than to chimpanzees.

Teco, The Autistic Bonobo Toddler



"When Teco was 2 months old, Elikya handed the baby off to his aunt, as if asking for help. The aunt, Panbanisha, brought him to institute staff, who took on more of the responsibility for rearing Teco.

That's when they began to notice that he also showed various autism-like symptoms: lack of eye contact, strict adherence to rituals or routines, repetitive behaviors and an interest in objects rather than in social contact..."

Teco, The Bonobo Toddler



- "...A blanket, for example, has to be arranged just so or else Teco becomes agitated, says scientific director William Fields. Teco also shows repetitive movements similar to those seen in some children with autism."
- "He seemed to be fascinated by parts of objects, like wheels and other things and he wasn't developing joint attention," Fields adds. "The baby was avoiding eye contact — it was like it was painful for him."

Deweert, S. (April 15, 2011). An Ape With Autism. New York, NY: Simons Foundation, Autism Research Initiative (SFARI). From website: https://sfari.org/about-sfari/contact-us.

Alexithymia

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What is Alexithymia?



- 1. Tends not to have fantasies, no feelings and have sharply limited emotional vocabularies.
- 2. They have colorless dreams.
- 3. They cannot tell bodily sensations from emotions and are baffled by them.
- 4. They have great difficulty making decisions because they lack "gut feelings."

Goleman, D. (1995). <u>Emotional Intelligence: Why It Can Matter More Than I.Q.</u> New York, NY: Bantam.

Alexithymia

 "Functional imaging studies implicate medial and prefrontal cortex and posterior superior sulcus (STS)... The STS is concerned with representing the actions of others through the detection of biological motion; medial prefrontal regions are concerned with explicit representation of the states of the self. These observations suggest that the ability to mentalize has evolved from a system for representing actions."

Frith, C.D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. <u>Science</u>, <u>286</u>, 1692-1695.

Alexithymia

Lane wrote, "Several neuroimaging studies reveal that an area of the medial prefrontal cortex very close to that identified in our attention to emotional experience study has been implicated during the performance of theory of mind tasks...these findings suggest that the neural substrates of the mental representation of one's own and other's mental states are closely related." (p. 18) Lane continued that several studies of brain injured individuals when coupled with the above appeared to indicate, "...that successful social adaptation requires the 'dual task' ability to stay in touch with the needs of others while paying due attention to one's own needs." (p. 20)

Lane, R. (2000). Neural Correlates of Conscious Emotional Experience. In L.R. Lane, et. al. (Eds.), <u>Cognitive Neuroscience of Emotion</u>. New York, NY: Oxford University Press, pp. 345-370.

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Macaque Monkey





Macaques "Mirror Neurons"

Researchers discovered "mirror neurons" at the University of Parma in Italy in 1992.

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.







- Italian study of macaque monkeys in 1992
 - Known for years cells of premotor cortex fire just before movement.
 - Discovered that same cells fired in the same pattern when another primate was seen making the same movement!
 - Humans have these MIRROR NEURONS too.
 - They allow us to intuit others intentions and to feel their pain.

Lametti, D. (June 9, 2009). Mirroring Behavior. <u>Scientific American</u>, from website: <u>www.scientificamerican.com/article.cfm?id=mirroring-behavior</u>.

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"Much as circuits of neurons are believed to store specific memories within the brain, sets of mirror neurons appear to encode specific sets of actions. This property may allow an individual not only to perform basic motor procedures without thinking about them but also to comprehend those acts when they are observed, without any need for explicit reasoning about them." (p. 56)

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. <u>Scientific American</u>, <u>296</u> (5), pp. 54-61.

<u>Mirror Neurons</u>



• "With knowledge of these neurons, you have the basis for understanding a host of enigmatic aspects of the human mind: 'mind reading' empathy, imitation learning and even the evolution of language. Anytime you watch someone else doing something (or even starting to do something), the corresponding mirror neuron might fire in your brain, thereby allowing you to 'read' and understand another's intentions and thus develop a sophisticated theory of other minds." (p.2)

Ramachandran, V.S. (3/8/05). Mirror Neurons and Imitation Learning as the Driving Force Behind "The Great Leap Forward" in Human Evolution. <u>www.edge.org/3rd_culture/ramachandran/ramachandran_p2.html</u>



Mirror Neuron Neurology (WEBSITE: 51)

"This circuitry comprises the human superior temporal sulcus and the human mirror neuron system –namely, the inferior frontal cortex, which seems particularly important for coding the goal imitated action... and the rostral part of the inferior parietal lobe." (p. 158)

Goldstein, S., Naglieri, J.A., and Ozonoff, S. (2009). <u>Assessment of Autism Spectrum</u> <u>Disorders</u>. New York, NY: Guilford, p. 158.

Mirror Neurons May Help Us Generate Appropriate Social Responses

"These results suggest that a set of mirror neurons encodes the observed motor acts not only for action understanding, but to analyze such acts in terms of features that are relevant to generating appropriate behaviors."

Caggiano, V., Fogassi, L., Rizzolatti, G., Their, P., Casile, A. (April 2009). Mirror Neurons Differently Encode the Peripersonal and Extrapersonal Space of Monkeys. <u>Science</u>. <u>324</u> (5925), pp. 403-406; From website:

www.sciencemag.org/cgi/content/abstract/324/5925/403.



Mirror Neurons & Executive Functions



"Studies show that the capacity to imitate the actions of others is now virtually an instinct at the level of neuronal functioning. The PFC (Prefrontal Cortex, sic) responds to viewing others' actions by activating the same sensory-motor regions of the brain as the acting person is using to create the behavior. The mirror-neuronal system has been linked to theory of mind and to empathy, among other human attributes related to EF (Executive Functions, sic.)" (p. 117).

Barkley, R.A. (2012). <u>Executive Functions: What They Are, How they Work, and Why They Evolved</u>. New York, NY: Guilford.

Mirror Neurons



How does the following relate to AD/HD?:

"If the mirror neuron system serves as a bridge in this process, then in addition to providing an understanding of other peoples intentions, it may have evolved to become an important component in the human capacity for observation-based learning and sophisticated cognitive skills." (p. 61)

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. <u>Scientific American</u>, <u>296</u> (5), pp. 54-61.

Mirror Neurons



How does this relate to ADHD?

Barkley (2008) said that those with Combined Type AD/HD and comorbid Alexithymia typically have intact mirror neurons, they just do not use their mirror neurons due to their frontal lobe difficulties.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

Mirror Neurons and Autism

"Broken mirror neurons" <u>MAY</u> explain isolation and lack of empathy.

Those with autism spectrum disorder lack activity in many areas associated with mirror neurons.

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific American</u>, <u>296</u>(5), pp. 62-69.







I spoke to Uta Frith about using the combination of her group's research on emotional working memory and the mirror neuron research as an explanation of the behaviors of autism spectrum disorder. She said the combination of theories could not differentiate autistic behavior and antisocial behavior.

Frith, U. (November 1, 2007). Personal Communication. International Dyslexia Association 58th Annual Conference, Dallas, TX.





However, Blair wrote after reviewing the literature, "It is suggested from this literature that empathy is not a unitary system but rather a loose collection of partially dissociable systems. In particular, three divisions can be made: cognitive empathy (or Theory of Mind), motor empathy and emotional empathy. The two main psychiatric disorders associated...





"...with empathic dysfunction are considered: autism and psychopathy. It is argued that individuals with autism show difficulties with cognitive and motor empathy but less clear difficulties with respect to emotional empathy. In contrast, individuals with psychopathy show clear difficulties with a specific form of emotional empathy but no indications of impairment with cognitive and motor empathy." (p. 1 of 2)

Blair, R.J.R. (December, 2005). Responding to the Emotions of Others: Dissociating Forms of Empathy Through the Study of Typical and Psychiatric Populations. <u>Consciousness and Cognition</u>, <u>14</u> (4), pp. 698-718. From Website:

www.sciencedirect.com/science?_ob=ArticleURL&_=B6WD0-4H39727-2&_user.

Zero Degrees of Positive Empathy Vs Zero Degrees of Negative Empathy (WEBSITE: 52-53)

What Blair wrote about empathy is essentially what Simon Baron-Cohen wrote regarding differentiating ASD and antisocial individuals in his book:

Baron-Cohen, S. (2011). <u>The Science of Evil: On</u> <u>Empathy and The Origin of Cruelty</u>. New York, NY: Basic Books.

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Glaser, D. (January 2005). Mirror Neurons: Research Update. NOVAscienceNOW. Public Broadcasting System (PBS). <u>www.pbs.org/wgbh/nova/sciencenow/3204/01-</u> <u>resup.html</u>, p. 1

Calvi-Merino, B., Glaser, D.E., Greeze, J., Passingham, R.E., and Haggard, P. (2005). Action Observation and Acquired Motor Skills: An fMRI Study with Expert Dancers. <u>Cerebral</u> <u>Cortex</u>, <u>15</u> (8), p. 1243-1249.

Alexithymia and AD/HD

22% of adults with AD/HD meet criteria for alexithymia

Edel, M.A., et al. (September 24, 2010). Alexithymia, emotion processing and social anxiety in adults with ADHD. European Jounal of Medical Research, 24(15), 403-409, From website: http://www.ncbi.nlm.nih.gov/pub med/20952350.



ASD and Alexithymia

"...some individuals with ASD may experience characteristics of *alexithymia*, a diminished vocabulary to describe the different levels of emotional experience, especially the more subtle emotions" (p. 35).*

*Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for</u> <u>Children and Adolescents with High-Functioning Autism Spectrum</u> <u>Disorders</u>. New York, NY: Guilford.

Attwood, T. (2007). <u>The Complete Guide to Asperger's Syndrome</u>. Philadelphia, PA: Jessica Kingsley, p. 130

"Symptoms" of Alexithymia

- Difficulty identifying different types of feelings
- Difficulty distinguishing between emotional feelings and bodily feelings
- Limited understanding of what caused the feelings
- Difficulty verbalizing feelings
- Limited emotional content in the imagination
- Functional style of thinking
- Lack of enjoyment and pleasure-seeking
- Stiff, wooden posture

Author (January 23, 2003). <u>The Alexithymia FAQ</u>. From web site:

www.anglefire.com/al4/alexithymia/

What About PTSD?



"If mild stress becomes chronic, the unrelenting cascade of cortisol triggers genetic actions that begin to sever synaptic connections and cause dendrites to atrophy and cells to die; eventually, the hippocampus can end up physically shriveled, like a raisin." (p. 74)

Ratey, J.J. (2008). <u>Spark: The Revolutionary New Science of Exercise and The Brain</u>. New York, NY: Little, Brown, p. 74.

What About PTSD?

- Hippocampus looses neuronal connections
- Medication and talk therapy can grow new neurons

Prince, J. (October 28, 2006). <u>Closing Keynote Address - Bridging the Gap: Putting a</u> <u>Face on AD/HD</u>. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Durman, R.S. (2002). <u>European Journal of Psychiatry</u>, <u>17</u> (Supplement 3), 306-310. Saploski, R.M. (2004). <u>Why Zebras Don't Get Ulcers, Third Edition</u>. New York, NY: Holt, p.221

What About PTSD?



"At every level, from the microcellular to the psychological, exercise not only wards off the ill effects of chronic stress; it can also reverse them. Studies have shown that if researchers exercise rats that have been chronically stressed, that activity makes the hippocampus grow back to its preshriveled state." (p. 79)

Ratey, J.J. (2008). <u>Spark: The Revolutionary New Science of Exercise and The Brain</u>. New York, NY: Little, Brown.

Diagnostic Tools for Alexithymia



> Toronto Alexithymia Scale (TAS-20)

Taylor, G.J. (1992). <u>Twenty-Item Toronto Alexithymia Scale (TAS-20)</u>. Graeme J. Taylor, MD, Department of Psychiatry, Mount Sinai Hospital, 600 University Avenue, Toronto, Ontario, CA M5G 1X5; <u>www.gtaylorpsychiatry.org/tas.htm</u>.

> Observer Alexithymia Scale (OAS)

Haviland, M.G., Warren, L., and Riggs, M.L. (October, 2000). <u>Psychosomatics</u>, <u>41</u>, p. 385-392.

Bermond–Vorst Alexithymia Questionnaire (BVAQ)

Vorst, H.C.M., and Bermond, B. (February, 2001). Validity and Reliability of the Bermond– Vorst Alexithymia Questionnaire. <u>Personality and Individual Differences</u>, <u>30(3)</u>, 413-434. <u>Possible Treatment for Emotional</u> <u>Working Memory Problems</u>

- Stimulant Medication?
 - Lessens Hyperactivity and Impulsivity in AD/HD, Combined Type Individuals
 - Hundreds of Double Blind Studies to Support

Barkley, R.A. (2006). <u>Attention Deficit Hyperactivity Disorder, 3rd Edition</u>. New York, NY: Guilford.



Possible Alternative Medicine Treatment for Working Memory Problems (WEBSITE: 54-87)

- **Working Memory Training:**
 - Torkel Klingberg, M.D., Ph.D.
 - > Karolinska Institute- Stockholm, Sweden
 - CogMed software company (RM Program)
 - > AD/HD deficient in visual spatial working memory (WM) that becomes worse with age.
 - MAY help relieve visual spatial WM difficulties and reading comprehension in Combined Type AD/HD.

More Research is needed! www.cogmed.com

Klingberg, T. (February, 2006). Training Working Memory. <u>AD/HD Report</u>, <u>14</u> (1), pp. 6-8.

- Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. <u>ADHD</u> <u>Report</u>, <u>14</u> (1), pp. 9-11.
- Ingersoll, B. (October 26, 2006). <u>Complementary Treatments for AD/HD</u>. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.
- Klingberg, T. and Anderson, M. (October 28, 2006). <u>Computerized Training of Working Memory in</u> <u>Children with AD/HD</u>. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Treating Mirror Neuron Difficulties

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Oxytocin & Vasopressin In Autism



"Oxytocin and vasopressin contribute to a wide variety of social behaviors, including social recognition, communication, parental care, territorial aggression and social bonding." (p. 2187)

 Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. <u>Philosophical Transactions of the Royal Society of Biological</u> <u>Sciences</u>, <u>361</u> (1476), pp. 2187-2198. From Website: <u>http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849</u>

Some Treatments For Mirror Neuron Difficulties

- Risperidone and MDMA (ecstasy): To raise oxytocin levels
- Biofeedback: To help control anxiety
- Oxytocin Nasal Spray



- .Author (1997). Use of "Atypical" Neuroleptics in the Treatment of PDDs. <u>MedScape Psychiatry</u> <u>& Mental Health Journal</u>, <u>2</u> (4): <u>www.medscape.com/viewarticle/430897_5</u>
- Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific</u> <u>American</u>, <u>296(5)</u>, pp. 62-69.
- Guastella, A.J., Einfeld, S.L., Gray, K.M., Rinehart, N.J., Tonge, B.J., Lambert, T.J., and Hickie, I.B. (April 1, 2010). Internasal Oxytocin Improved Emotion Recognition for Youth with Autism Spectrum Disorders. <u>Biological Psychology</u>, <u>67</u> (7), 692-694; <u>www.ncbi.nlm.nih.gov/pubmed/19897177</u>.

MDMA & Oxytocin Nasal Spray ARE EXPERIMENTAL TREATMENTS!!!!

Theory of Mind & Mirror Neuron "Software"

 "Able individuals with autism spectrum disorders can with time and practice achieve awareness of mental states by compensatory learning." (p. 977)

Frith, U. (2001). Mind Blindness and the Brain in Autism. <u>Neuron</u>, <u>32</u>, 969-979.

• Possible Treatment Technique -

Carol Gray – Social Stories & Laurel Falvo- Social Response Pyramid:



www.thegraycenter.org/

ASD Alexithymia Treatment

"Affective education within CBT aims to improve the vocabulary of the child or adolescent with ASD to describe emotions, thereby diminishing the effects of alexithymia. One approach is to quantify the degree of expression, such that if the precise word is elusive, the child or adolescent can calibrate and express his or her degree of emotion using a thermometer or numerical rating, thus indicating intensity of emotional experience" (p. 35).

Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism</u> <u>Spectrum Disorders</u>. New York, NY: Guilford.

Professionals Who Can Help With Alexithymia

- Psychologists-American Psychological Association: <u>www.apa.org</u>
- Psychiartists-American Psychiatric Association: <u>www.apa@psych.org</u>
- Social Workers-National Association of Social Workers: <u>www.naswdc.org</u>
- American Association of Marriage and Family Therapists: <u>www.aamft.org</u>
- Counselors-National Board of Certified Counselors: <u>www.nbcc@nbcc.org</u>

Professionals Who Can Help With Alexithymia (Continued) (Website: 88-107)

- Behavioral Neurology/Neuropsychiatry-American Neuropsychiatric Association: <u>www.anpaonline.org</u>
- Speech Language Pathologist-American Speech-Language Hearing Association: <u>www.professional.asha.org</u>

THE CEREBELLUM

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What The Cerebellum Does

Allen indicated neuroimaging studies show the Cerebellum is involved in the following functions:

- > Attention
- Forms of Learning
- > Memory tasks
- Conditional anxiety



Complex reasoning and problem solving

Sensory and Motor Tasks

Allen, G. (March 11, 1998). <u>Functional Diversity of the Cerebellum</u>. Paper presented at the New Angles on Motor and Sensory Coordination in Learning Disabilities Topical Medical Workshop; Learning Disabilities Association, International Conference, Washington, DC; Infomedia, tape R130-W1A, Garden Grove, CA.

The Cerebellum & Social Interaction



"The Cerebellum has only recently been implicated in the normal functioning of social behavior...new research has shown that the cerebellum is important as a mediator in cognition. To perceive an object or event, we must pull together the various sensory qualities and any relevant memories or thoughts in a carefully timed way...the cerebellum assists in delaying or accelerating these associations, and regulates attentional states..."

The Cerebellum & Social Interaction (Continued)



"...Coordinating associations and attention is essential to entering into a relationship with another human being. Communication, conversation and graceful social interaction all depend on being able to pay attention to another person and to one's own internal states and to alternate easily back and forth between them." (p.305)

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

SLD with Impairment in Reading: Dyslexia and The Cerebellum

80% of dyslexics show signs of cerebellar problems!



Fawcett, A. J. and Nicolson, R. I. (2001). Dyslexia and The Role of The Cerebellum. In A. J. Fawcett (Ed.), <u>Dyslexia: Theory & Good Practice</u>. Philadelphia, PA: Whurr, pp. 89-105.
Fawcett, A. J. (August 11, 2010). Personal Communication.

SLD: Dyslexia and The Cerebellum

> Automaticity is the problem!



- > When multitasking and rapid processing are needed
- > Thinking is a frontal lobe function
- > It is a problem of fluency
- "…fluency is in essence the ability to repeat previous actions or thoughts more and more quickly without conscious thought." (p. 101)
 - Fawcett, A.J. and Nicolson, R.I. (2001). Dyslexia and The Role of The Cerebellum. In A.J. Fawcett (Ed.), <u>Dyslexia: Theory & Good Practice</u>. Philadelphia, PA: Whurr, pp. 89-105.

SLD: Dyslexia and The Cerebellum

Nicolson Said Bottom Line:

"...That means if you have a task that takes 4 hours for the non-dyslexic kid to learn, it will take twice as long for the dyslexic kid; 8 hours. But, its not linear. You have a task which takes 100 hours it will take 10 times as long. If you have a task that takes 10,000 hours it will take 100 times as long, and so on...Therefore if you have something like reading, writing and spelling which takes 100s..."
SLD: Dyslexia and The Cerebellum (Continued)



"...of hours that's the sort of thing in which dyslexic children are particularly adversely affected."

Nicolson, R., and Fawcett, A. (November, 2000). <u>Dyslexia, The Cerebellum and</u> <u>Phonological Skill</u>. Paper presented at the International Dyslexia Association Annual Conference, Washington, DC.

SLD: Dyslexia and Procedural Training

The Square Root Rule:

"The extra time needed for a dyslexic child to master a task is proportional to the square root of the time a non-dyslexic child takes." (Slide 45)

Fawcett, A. (November 5, 2004). <u>Dyslexia and Learning</u>. Paper presented at the 55th International Dyslexia Conference, Philadelphia, PA, from handout of slides, Number 45.

SLD: Dyslexia and Automaticity (WEBSITE: 108-109)

- > DAD: Dyslexia Automaticity Deficit
- Dyslexics get tired more quickly when learning and/or performing a new skill than the norm.
- CC: "This states that, despite their more limited automaticity of skill, dyslexic children are able to perform at apparently normal levels most of the time by 'consciously compensating,' that is consciously concentrating (controlled processing) on performance that would normally be automatic." (pp. 68-69)

Nicolson, R.I., and Fawcett, A.J. (2008). <u>Dyslexia, Learning, and the Brain</u>. Cambridge, MA: MIT Press, pp. 68-69.

European Perspectives of AD/HD



Disorder of Attention, Motor Control and Perception (DAMP):

Swedish researchers have been doing longitudinal research since 1977 with a group of children with AD/HD and Developmental Coordination Disorder which they view as one disorder called DAMP. At age 22 30% of the children still met criteria for AD/HD and DCD.

Gillberg, C. (2001). ADHD with Comorbid Developmental Coordination Disorder: Long-Term Outcome in a Community Sample, <u>ADHD Report</u>, 9 (2), pp. 5-9
Gillberg, C. and Kadesjo, B. (2000). Attention-Deficit/Hyperactivity Disorder and Developmental Coordination Disorder. In T.E. Brown (Ed.), <u>Attention-Deficit Disorders</u>

and Comorbidities in Children, Adolescents and Adults. Washington, DC: American Psychiatric Press, pp. 393-406.

The Neurology of the AD/HD

Barkley stated there are three areas of the brain that are significantly different in those who are AD/HD:

- 1. The Orbital Prefrontal Cortex-Primarily the Right Side
- 2. The Cerebellar Vermis-Primarily the Right Side
- 3. The Basal Ganglia-Striatum and Globus Pallidus

Barkley, R.A. (2002B). <u>ADHD and Oppositional Defiant Children</u>. Seminar presented February 19-20, Phoenix, AZ.

Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder</u>. New York, NY: Guilford.

Barkley's 30%-40% Rule for AD/HD

People with Combined Type AD/HD tend to be on average 30% - 40% less mature in controlling their hyperactivity, impulsivity, and inattentiveness than their non-disabled age peers.

- Barkley, R.A. (1998). <u>ADHD in Children, Adolescents and Adults: Diagnosis, Assessment and</u> <u>Treatment</u>. New England Educational Institute, Cape Cod Symposium (August), Pittsfield, MA.
- Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

Warning for Driver's Education Instructors with AD/HD Combined Types Students!

- The average 16 year old with AD/HD functions like an 11 year old when it comes to controlling their hyperactivity, impulsivity and inattentiveness.
- How many of you would want an 11 year old behind the wheel of a car?



Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). <u>ADHD In Adults: What The Science Says</u>. New York, NY: Guilford.

Warning for Driver's Education Instructors with AD/HD Combined Type Students!

- AD/HD teens are more likely to have driven a car illegally before they have their drivers license.
- They are less likely to be employing good driving habits.
- They will incur many more traffic citations, especially for speeding.
- They are four times more likely to be in an accident.
- They will have even more problems if they have Oppositional Defiant Disorder and/or Conduct Disorder with their AD/HD.
- Un-medicated people with AD/HD who are sober handle a car as well as a person who is not AD/HD who is legally drunk!

Barkley, R.A. (2006). <u>Attention Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY, Guilford.

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Warning: Driving and AD/HD

"Fortunately, the driving performance of adults with ADHD has been shown to improve with medication management, at least those aspects of poor driving likely to derive from ADHD itself." (p. 376)



Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). <u>ADHD In Adults: What The Science Says</u>. New York, NY: Guilford.

Warning for Health Class Instructors!

- People with AD/HD have a significantly reduced life expectancy due to an impulsive lack of concern for health related issues, exercise, diet, drugs, etc.
- Barkley, R.A. (1998). <u>Attention-Deficit Hyperactivity Disorder, Second Edition</u>. New York, NY: Guilford.
- Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford, p. 165.
- Spend significantly more time with them emphasizing the importance of good health and developing ways to ensure they follow through with annual check-ups, etc.



Cerebellum and ASD

There is good neuroimaging data that indicates many with Autism Spectrum have altered cerebellar function, and are more clumsy than the norm.

- Nayate, A., Bradshaw, J.L., and Rinehart, N.J. (2005). Autism and Asperger's Disorder: Are They Movement Disorders Involving The Cerebellum and/or Basal Ganglia? <u>Brain</u> <u>Research Bulletin</u>, <u>67</u> (4), pp. 327-334.
- Attwood, T. (1998). <u>Asperger Syndrome: A Guide for Parents and Professionals</u>. Philadelphia, PA: Jessica Kingsley.
- Attwood, T. (2007). <u>The Complete Guide to Asperger's Syndrome</u>. Philadelphia, PA: Jessica Kingsley, pp. 259-270.

Exhaustion and Anxiety

H

H

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Exhaustion and Specific Learning Disorder

Roffman wrote, "One final ongoing issue that is worthy of mention for many with LD/ADHD is the problem of fatigue. The extra effort required to cope with the continued social and academic demands of schooling can be chronically exhausting." (p. 217)

Roffman, A.J. (2000). <u>Meeting The Challenge of Learning Disabilities In Adulthood</u>. Baltimore, MD: Brookes.

Observation of an Autistic Genius:

- Temple Grandin said for those with autism spectrum disorders, social adaptation must occur on a conscious level.
- I believe the same is true for many with SLD, AD/HD, NVLD, etc.

Grandin, T. (1995). <u>Thinking in Pictures and</u> <u>Other Reports from My Life with Autism</u>. New York, NY: Vintage.



Anxiety and SLD and/or AD/HD



Roffman wrote, "Adults with LD/ADHD often experience pressure as they work to cope with their symptoms. Anxiety develops out of such day-to-day occurrences as the loss of yet another set of keys..." (p. 49)

Roffman, A.J. (2000). <u>Meeting The Challenge of Learning Disabilities In</u> <u>Adulthood</u>. Baltimore, MD: Brookes.

Summary Statement

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Kevin T. Blake, Ph.D., P.L.C.'s Observation

"If you have a neurosocial deficit (i.e., in the brain hardware for social interaction) you are forced to create software to compensate for it. That's hard and takes time and energy. It also takes an action which is for most people unconscious and makes it conscious, hence it will never be as "automatic and efficient" as an ability..."

Kevin T. Blake, Ph.D., P.L.C.'s Observation (Continued)

"...Such compensation skills divide attention and make tasks which are by their nature not conscious more onerous and less efficient creating frustration. When additional stimuli is added on an unpredictable basis this requires a cognitive shift and these learned skills tend to break down which may lead to a feeling of vulnerability and anxiety..."

Kevin T. Blake, Ph.D., P.L.C.'s Observation (Continued)

- "...People with such disabilities tend to fatigue faster in social situations and perform cognitively less efficiently when engaged in their social 'skills' compensations.
- Those with neurosocial deficits are at risk of not being aware of and/or sensitive to cultural norms and symbols as well as their importance in social interaction. This unawareness may cause significant social rejection, anxiety and frustration for these individuals..."

Kevin T. Blake, Ph.D. P.L.C.'s Observation (Continued)

 An additional source of frustration and anxiety for individuals with these deficits is most peoples' social interactions are automatic and thus they frequently do not understand the struggles of those who must socialize on a cognitive level.



<u>RESEARCH PROGRAM IN READING</u> <u>DEVELOPMENT, READING DISORDERS, AND</u>

READING INSTRUCTION

Initiated 1965

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A Good Book That Summarizes This

Fletcher, J.M., Lyon,
 G.R., Fuchs, L.S. and
 Barnes, M.A. (2007).
 Learning Disabilities:
 From Identification to
 Intervention. New York,
 NY: Guilford.





- Run by the National Institute of Child Health and Development (NICHD)
- > Which is part of the National Institute of Health (NIH)
- Study began in 1965 and continues today!
- > As of 1999 over *\$150,000,000.00* has been spent!
- > Study now budgeted for *\$15,000,00.00* per year!



- > Conducted at 42 sites in the U.S. and Europe
- **Follow-up studies for over 14 years**
- Much of the neurological research in this presentation comes from this study.
- China, England, Israel, Russia, Sweden and Turkey have conducted similar studies...

Lyon, G.R. (1999). <u>In Celebration of Science in the Study of Reading</u> <u>Development, Reading Disorders and Reading Instruction</u>. Paper presented at the International Dyslexia Association 50th Annual Anniversary Conference, November 4, 1999, Chicago, IL.

>30,000 scientific works from NICHD research

44,000 studied, 5 years old and up; with 5 year follow-ups

Lyon, G.R. (Thursday, February 27, 2003). <u>Application of Scientific Research Methods to</u> <u>the Study of Naming Deficits: Systematic Interventions to Improve Fluency in Word</u> <u>Reading Skills and Comprehension</u>. Paper Presented at the 40th Annual Learning Disabilities Association Conference, Chicago, IL, Session T-39.



- 48,000 children have been in the study as of 2004. The follow-up study is now 21 years.
- > 3,800 in new adult study
- "2 to 6% of the population are the 'Hard Core' Dyslexics that will not improve with 'Good Instruction'. They have the full dyslexic neurology and need multi-sensory approaches."
- Lyon, G.R. (March 19, 2004). <u>A Summary of Current NICHD Research Findings in Math</u> <u>and Reading Development in English Speaking Children and Plans For Future</u> <u>Research.</u> Seminar Presented at the 41st Annual Learning Disabilities Association of America International Conference, Atlanta, Georgia, March 17 to March 20, 2004.



- 7% of the population will meet criteria for Major Depressive Disorder in any year
- > Persistent Depressive Disorder (Dysthymia) is 0.05.
- 3 to 13% Social Anxiety Disorder (Social Phobia) is 7%
- > 0.9% in teens & 2.9% in adults Generalized Anxiety Disorder

Bipolar Disorder 0.6%

Author (2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition</u>. Washington, DC: American Psychiatric Association.

Reading Disorder-Dyslexia



"The idea that learning to read is just like learning to speak is accepted by no responsible linguist, psychologist, or cognitive scientist in the research community." (pp. 285-286)

Stanovich, K.E. (1994). Romance and Reality. <u>The Reading Teacher</u>, <u>47</u>, pp. 280-291.

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<u>Specific Learning Disorder-</u> Dyslexia



The Symptoms of Dyslexia are:
1. Weak Phonemic Awareness
2. Slow, Rapid Automatized Naming
3. Poor Orthographic Processing
4. Exceptionally Poor Automatization
5. Poor Coordination

Fawcett, A.J. (2001). <u>Dyslexia: Theory and Good Practice</u>. Philadelphia, PA: Whurr.
 Blake, K.. (2003) Personal Observation.

SLD-Dyslexia



Some Dyslexics had all the symptoms.

Some only had one.

Four had none of the aforementioned deficits.

Reid, A.A. (November 11, 2006). <u>Cognitive Profiles of Individuals with Developmental Dyslexia</u>: <u>Insights From a Large Sample Study. Preliminary Findings</u>. Paper presented at the 57th Annual International Dyslexia Association Conference, Indianapolis, IN.

Definition Of Dyslexia (WEBSITE: 110-111)



"Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition as well as by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the lack of provision of effective classroom instruction. Secondary consequences may include...

Definition Of Dyslexia



...problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."

Adopted by the National Institutes of Health (NIH) and the International Dyslexia Association (IDA) 2002

International Dyslexia Association (April 20, 2005). IDA/NIH Adopts A New Definition of Dyslexia. From website:

www.interdys.org/serlet/compose?section_id=8&page_id=69, Page 1 0f 2

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 Aoccrdnig to rscheearch at Cmabrigde Uinervisy, it deosn't mttaer in waht oredr the Itteers in a wrod are, the olny iprmoatnt tihng is taht the frist and Isat Itteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it wouthit a porbelm.

Davis, M. (2003). <u>www.mrc-cbu.cam.ac.uk/~mattd/Cmabrigde/</u> Rawlinson, G. (1999). Reibadailty. <u>New Scientist</u>. <u>162</u> (2188), p. 55. From website: www.mrc-cbu.cam.ac.uk/~mattd/Cmabrigde/newscientist_letter.html

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"LEXDEXIA"

- "reversals" (seeing "was" as "saw") and "rotations" ("b" as "p"; "p" as "d", etc.) occur in most children up through fourth grade. This is typical in the development of visual orthographic memory.
- The brain automatically learns what something looks like in mirror image (this is an instinct).
- > Only about 7% of adult dyslexics have this concern.
- ***** Dyslexia is <u>not</u> seeing the word "WAS" as "SAW".

Anderson, C.W., Jr. (January 23, 2006). Personal Communication.
Dehaene, S. (2009). <u>The New Science of How We Read</u>. New York, NY: Penguin.
Badian, N. A. (2005). Does a Visual-Orthographic Deficit Contribute to Reading Disability? <u>Annals of Dyslexia</u>, <u>55</u> (1), pp. 28-52.

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Specific Reading Comprehension Disorder

"Specifically, TD (Typical Developing Readers), sic.) showed a higher-percent signal change within right IFG (inferior frontal gyrus, sic.) for low-versus-high frequency words as compared to both S-RCD (Specific **Reading Comprehension Deficits, sic.) and DYS** (dyslexia, sic.). Using psychophysiological interaction analyses, a coupling-by-reading group interaction was found in right IFG for DYS, as indicated by a widespread greater covariance between right IFG and right occipitotemporal cortex/visual word-form areas, as well as bilateral medial frontal gyrus, as compared to TD..."

Specific Reading Comprehension Disorder

"For S-RCD, the context-dependent functional interaction anomaly was most prominently seen in left IFG, which covaried to a greater extent with hippocampal, parahippocampal, and prefrontal areas than for TD for low- as compared to high-frequency words. Given the greater lexical access demands of low frequency as compared to high-frequency words, these results may suggest specific weaknesses in accessing lexical-semantic representations during word recognition. These novel findings provide foundational insights into the nature of S-RCD, and set the stage for future investigations of this common, but understudied, reading disorder" (p. 199).
Reference

Cutting, L.E. et al (2013). Not all reading disabilities are dyslexia: distinct neurobiology of specific comprehension deficits. <u>Brain</u> <u>Conectivity</u>, <u>3</u>(2), 199-211. From website: <u>http://www.ncbi.nlm.nih.gov/pubmed/2327</u> <u>3430</u>.

Social Anxiety and Shyness

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Social Anxiety/ Shyness





Fight or Flight Response

- Benson, H. (1983). <u>The Relaxation</u> <u>Response</u>. New York, NY: Outlet Books.
- Benson, H. (1994). <u>Beyond The</u> <u>Relaxation Response</u>. New York, NY: Berkley Books.

Fight-or-Flight Response Vs. Tend-and-Befriend Response





 Shelley Taylor, Ph.D.

Taylor, S.E. (2002). <u>The</u> <u>Tending Response</u>. New York, NY: Holt.

Tend-and-Befriend (WEBSITE: 112-120)



Taylor, S.E. (2002). <u>The Tending Instinct: How</u> <u>Nurturing is Essential To Who We Are And</u> <u>How We Live</u>. New York, NY: Holt.



Tend-and-Befriend



"The human stress response has been characterized, both physiologically and behaviorally, as "fight-orflight." Although fight-or-flight may characterize the primary physiological responses to stress for both males and females, we propose that, behaviorally, females' responses are more marked by a pattern of "tend-and-befriend." Tending involves nurturant activities designed to protect the self and offspring that promote safety and reduce distress; befriending is the creation and maintenance of social networks that may aid in this process..."

Tend-and-Befriend



"...The bio-behavioral mechanism that underlies the tend-and-befriend pattern appears to draw on the attachment-caregiving system, and neuroendocrine evidence from animal and human studies suggests that oxytocin, in conjunction with female reproductive hormones and endogenous opioid peptide mechanisms, may be at its core. This previously unexplored stress regulatory system has manifold implications for the study of stress (p. 411).

Tend-and-Befriend



Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenwald, T.L., Regan, A.R., Updegraff, J.A. (2000). Behavioral Response to Stress in Females: Tend-and-Befriend, not Flight-or- Flight. <u>Psychological Review</u>, <u>107(3)</u>, 411-429.

Fight-or-Flight/Tend-and-Befriend Vs Rage

"...the core emotion of RAGE evolved from the experience of being captured and held immobile by a predator. Stimulation of subcortical brain areas causes an animal to go into rage. RAGE gives the captured animal the explosive energy it needs to struggle violently and maybe shock a predator into loosening its grip enough that the captured animal can get away."

Grandin, T., and Johnson, C. (2009). Animals Make Us Human: Creating the Best Life for

Animals. New York, NY: Houghton Mifflin.

"Savanna Anxiety"



"In general, when dominance hierarchies are unstable, glucocorticoid levels rise. This makes sense, because such instabilities make for stressful times. Looking at individual baboons, however, shows a more subtle pattern: given the same degree of instability, males whose ranks are dropping have elevated glucocorticoid levels, while male whose ranks are rising amid the tumult don't show this endocrine trait." (p. 263)

Saploski, R.M. (2004). Why Zebras Don't Get Ulcers, Third Edition. New York, NY: Holt.

"Savanna Anxiety"



"Thus after factoring out rank, lower basal glucocorticoid levels are found in males who are best at telling the difference between threatening and natural interactions; who take the initiative if the situation is clearly threatening; who are best at telling who won or lost; and, in the latter case who are most likely to make someone pay for the defeat." (p. 314)

Saploski, R.M. (2004). Why Zebras Don't Get Ulcers, Third Edition. New York, NY: Holt.

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"Remarkably, this style is stable over the years of these individuals' lives and carries a big payoff – males with this cluster of low glucocorticoid traits remain high ranking significantly longer than average." (p. 315)

Saploski, R.M. (2004). Why Zebras Don't Get Ulcers, Third Edition. New York, NY: Holt.

The "Whitehall" Study



"The Whitehall study of British civil servants begun in 1967, showed a steep inverse association between social class, as assigned by grade of employment, and mortality from a wide variety of diseases." (p. 1387) A second "Whitehall Study" was conducted from 1985 to 1988. "...and found an inverse relationship between employment grade and prevalence of angina, electrocardiogram evidence of ischemia and symptoms of chronic bronchitis. Self-perceived health status and symptoms were worse in subjects with lower status jobs. There were clear employment grade differences in health risk behaviors including..."

The "Whitehall" Study (Continued)

"...smoking, diet, and exercise, in economic circumstances, in possible effects of early-life environment as reflected by height, in social circumstances at work..., and social supports." (p. 1387).



Marmot, M.G., Smith, G.D., Stanfeld, S., Patel, C., Head, J., White, I., Brunner, E., and Fenney, A. (1991). Health Inequalities Among British Civil Servants: Whitehall II Study. <u>Lancet</u>, <u>337</u> (8754), p. 1387-1393. From website: <u>www.nicbi.nlm.gov/pubmed/1674771</u>.

Author (June 25, 2012). <u>Whitehall Study II (Stress and Health Study</u>). University College London, Research Department of Epidemiology and Public Health, London, England. From website: <u>http://www.ucl.ac.uk/whitehallII</u>.

Social Anxiety Disorder & Facial Expressions

"Hence, both behavioural and eye movement findings suggest that individuals with social anxiety disorder might be particularly impaired in processing facial expressions of anger" (p. 96).

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

Working Memory & Anxiety

There are experienced skydivers with many jumps who died because they are so stressed just prior to their jumps they fail to pull their cords. This is due to their working memories being so overcome with fear. "Acute stress can almost halve a person's mental capacity."

Klingberg, T. (2013). <u>The Learning Brain: Memory and brain Development in Children.</u> New York, NY: Oxford University Press.

Social Anxiety and Shyness



- Attwood (2002) gave an example of an Australian soldier with ASD who fought behind enemy lines as a lone sniper in Vietnam who said his social anxiety is much more pronounced than his PTSD from the war ever was.
- Atwood, T. (July, 2002). <u>Social Skills for Children with Asperger's and High Functioning</u> <u>Autism</u>. Workshop presented on July 19, 2002 in Scottsdale, AZ: Future Horizons, Inc. 721 West Abram Street, Arlington, TX 76013.

Social Anxiety



"Social anxiety can prevent you from accessing the social information you know to be true and the social skills you have intact...Unfortunately, social anxiety appears to be strongly correlated with having weaker social thinking and related social skills." (p. 206)

Garcia Winner, M., and Crooke, P. (2011). <u>Social Thinking At Work: Why Should I</u> <u>Care</u>. San Jose, CA: Social Thinking.

Social Anxiety Disorder (SAD) & Unemployment

- Patients with Major Depressive Disorder, or Anxiety Disorders have higher unemployment and work impairment than the norm.
- Patients with SAD are 2 ½ times more likely than those with Major Depressive Disorder, or other forms of Anxiety Disorders to be unemployed.

Moitra, E., Beard, C., Weisberg, R.B., and Keller, M.B. (September, 2010). Occupational and Social Anxiety Disorder in a Sample of Primary Care Patients. Journal of Affective Disorders. doi: 10.1016/jad2010.09.024.

Social Anxiety Disorder (SAD) & Unemployment

 "These findings highlight the particular need to assess the presence of under education and underperformance at work and/or unemployment in individuals with SAD, as they are at most risk for these impairments. Additionally, early detection and intervention with individuals with, or at risk for SAD may curb the impact of social anxiety or occupational attainment."

Moitra, E., Beard, C., Weisberg, R.B., and Keller, M.B. (September, 2010). Occupational and Social Anxiety Disorder in a Sample of Primary Care Patients. <u>Journal of Affective Disorders</u>. doi: 10.1016/jad2010.09.024.

25% of Americans Socially Isolated

- ✓ From 1985 to 2005 the typical American said the average number of people they could rely upon to help them with a significant concern dropped from 3 to 2.
- ✓ In 2005 twenty-five percent reported they had no trusted friend they could rely upon which is double the rate of 1985.

McPherson, M., Smith-Lovin, L. and Brashears, M.E. (2006). Social Isolation in America: Changes in Core Discussion Networks Over Two Decades. <u>American</u> <u>Sociological Review</u>, <u>71</u>, 353-375.

Isolation and The Immune System (Learn about "Melting Down" and ASD on WEBSITE: 121-124)

- Lonely people have more active genes that promote inflammation and less active genes that inhibit inflammation.
 - ✓ This puts them at risk for some cancers, degenerative neurological disorders and cardiovascular problems.
- Lonely people's immune systems are geared toward fighting bacteria not viruses.
- Sociable people have immune systems geared toward viruses.

Isolation and The Immune System

- Azar, B. (May, 2011). The Psychology of Cells. <u>Monitor On Psychology</u>, <u>42 (</u>5), 32-35.
- Miller, G., Chen, E. and Cole, S. (January, 2009). Health Psychology: Developing Biologically Plausible Models Linking the Social World and Physical Health. <u>Annual Review of Psychology</u>, <u>60</u>, 501-524.
- Cole, S.W., Hawkley, L.C., Arevalo, J.M., Sung, C.Y., Rose, R.M. and Cacioppo, J.T. (2007). Social Regulation of Gene Expression in Human Leukocytes. <u>Genome Biology</u>, <u>8</u> (9), doi:10.1186/gb-2007-8-9-r189.
- Cole, S.W., Hawkley, L.C., Arevalo, J.M.G. and Cacioppo, J.T. (February 15, 2011). Transcript Origin Analysis Identifies Antigen-Presenting Cells as Primary Targets of Socially Regulated Gene Expression In Leukocytes. <u>Proceedings of the National Academy of Sciences of the United States of</u> <u>America (PNAS)</u>, <u>108</u> (7), 3080-3085.

Social Anxiety & Shyness



- 10 to 15% of newborns have an inherited enhanced startle response.
- A 20 year follow-up study of such children with fMRI imaging indicated they are still shy neurologically, especially to strangers.
- Zimbardo, P.G. (2000). <u>The Personal and Social Dynamics of Shyness: Adults and</u> <u>Children</u>. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.
- Schwartz, C.E., Wright, C.I., Shin, L.M., Kagan, J., Rauch, S.L. (June, 2003). Inhibited and Uninhibited Infants "Grown Up": Adult Amygdalar Response to Novelty. <u>Science</u>, <u>300</u> (5627), pp. 1952-1953.

Social Anxiety and Shyness



The amygdala is activated in the genetically shy when they are shown pictures of unfamiliar people. This would tend to indicate they feel fear and are overly vigilant when they see strangers. This does not occur in the non-shy.

Schwartz, C.E., Wright, C.I., Shin, L.M., Kagan, J., Rauch, S.L. (June, 2003). Inhibited and Uninhibited Infants "Grown Up": Adult Amygdalar Response to Novelty. <u>Science</u>, <u>300</u> (5627), pp. 1952-1953.

Shyness Defined

 "Shyness may be defined experimentally as discomfort or inhibition in interpersonal situations that interferes with pursuing one's interpersonal or professional goals." (p. 497)

Henderson, L. and Zimbardo, P. (1998). Shyness. <u>Encyclopedia of Mental Health</u>, <u>3</u>, p. 497.



Social Phobia

• Two Subtypes:



- 1. Specific Type- public speaking, eating in public, etc.
- 2. Generalized Type-very broad
- These people shy away from treatment: 36% of those who meet DSM criteria actually get treatment
- Dittmann, M. (July/August, 2005). Stemming Social Phobia. <u>Monitor On Psychology</u>, <u>36</u> (7), pp. 92-94.
- Heimberg, R.G., Liebowitz, M.R., Hope, D.A., Scheier, F.R., Holt, C.S., Welkowitz, L.A., Juster, H.R., Campeas, R. Bruch, M.A., Cloitre, M, Fallon, B., Klein, D.F. (1998).
 Cognitive Behavior Group vs Phenelzine Therapy for Social Phobia. <u>Archives of</u> <u>General Psychiatry</u>, <u>55</u>, p. 1133-1141.

Shyness in a Nutshell



- "S"ELF-BLAME AND SHAME
- "A"VOIDANCE
- "D"ISTRESS
- "F"EAR OF NEGATIVE EVALUATION
- "I" MUST BUT I CAN'T
- "X"-POSURE: FEAR OF BOTH FAILURE AND SUCCESS
 "S"ELF SABOTAGE

Zimbardo, P.G. (2000). <u>The Personal and Social Dynamics of Shyness: Adults and</u> <u>Children</u>. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Shyness Treatment



- I asked Zimbardo what he thought those who had neurobiological disorders who were genetically shy needed most and he said, "Training in the skills to make legitimate excuses."
- Zimbardo, P.G. (2000). <u>The Personal and Social Dynamics of Shyness: Adults and</u> <u>Children</u>. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Shyness Treatment



- Cognitive Behavioral Therapy and Antidepressant Medication works 80% of the time with 5 year follow-up. Thought to be best method of treatment (Richard Heimberg, Ph.D.).
 - Dittmann, M. (July/August, 2005). Stemming Social Phobia. <u>Monitor On</u> <u>Psychology</u>, <u>36 (</u>7), pp. 92-94.
 - Heimberg, R.G., Liebowitz, M.R., Hope, D.A., Scheier, F.R., Holt, C.S., Welkowitz, L.A., Juster, H.R., Campeas, R. Bruch, M.A., Cloitre, M, Fallon, B., Klein, D.F. (1998). Cognitive Behavior Group vs Phenelzine Therapy for Social Phobia. <u>Archives of General Psychiatry</u>, <u>55</u>, p. 1133-1141.

Treatment of Social Anxiety/Shyness



 Zimbardo (2000) described a 26 week treatment program at his shyness clinic that includes the following: Cognitive Behavior Modification/Cognitive Restructuring, Self-Esteem Restructuring, Support Groups, Practice, Medications, Video Social Skills Training, Encouragement, etc.

• <u>www.shyness.com</u> and <u>www.shynessinstitute.com</u>

Zimbardo, P.G. (2000). <u>The Personal and Social Dynamics of Shyness: Adults</u> <u>and Children</u>. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000, Tucson, AZ.

Treatment of Social Anxiety/Shyness



- Henderson, L. (2011). <u>Improving Social</u> <u>Confidence and Reducing Shyness Using</u> <u>Compassion Focused Therapy</u>. Oakland, CA: New Harbinger.
- Henderson, L. (2009). <u>Social Fitness Training</u> <u>Manual: A Cognitive-Behavioral Approach to</u> <u>Treating Shyness and Social Anxiety Disorder</u>. Berkley, CA: The Shyness Institute.

People and Organizations Who Can Help With Social Anxiety/Shyness

- American Psychiatric Association: <u>www.apa@psych.org</u>
- American Psychological Association: <u>www.apa.org</u>
- Amerian Association of Marriage and Family Therapists: <u>www.aamft.org</u>
- National Board of Certified Counselors: <u>www.nbcc@nbcc.org</u>
- National Association of Social Workers: <u>www.naswdc.org</u>
- Anxiety Disorder Association of America: <u>www.adaa.org</u>



Exercise & ADHD (Website: 125-134)

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Exercise and AD/HD

"Following a single 20-minute bout of exercise, both children with ADHD and healthy match control children exhibited greater response accuracy and stimulus-related processing, with the children with ADHD also exhibiting selective enhancements in regulatory processes, compared with after a similar duration of seated reading. In addition, greater performance in the areas of reading and arithmetic were observed following exercise in both groups...These findings indicate that single bouts of moderately intense aerobic exercise may have positive implications for aspects of neurocognitive function and inhibitory control in children with ADHD." (p. 543)

Reference

Pontifex, M.B., Saliba, B.J., Raine, L.B., Picchetti, D.L., and Hillman, C.H. (March, 2013). Exercise Improves Behavioral, **Neurocognitive, and Scholastic Performance** in Children with Attention-**Deficit/Hyperactivity Disorder. Journal of** Pediatrics, 162(3), 543-551. From website: http://www.jpeds.com/article/S0022-3476(12)00994-8/abstract.
Good Resources on Exercise and Counseling (Website: 125-133)



- Ratey, J.J. (Fall, 2010). Your Brain On Exercise.
 <u>ADDitude</u>, <u>11</u> (1), 36-39.
- Ratey, J.J. (2008). <u>Spark: The Revolutionary New</u> <u>Science of Exercise and The Brain</u>. New York, NY: Little, Brown.

 ✓ <u>Always consult a physician before starting an</u> <u>exercise program!</u>

- Problems in the amygdala and lack of emotional salience landscape may account for sensory sensitivity.
- These problems are found in those with Autism Spectrum Disorder.
- Insula/Amygdala : pain & disgust

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific American</u>, <u>296</u>(5), pp. 62-69.

"In a typical child, sensory information is relayed to the amygdala, the gateway to the emotion-regulation limbic system. Using input from stored knowledge, the amygdala determines how the child should respond emotionally to each stimulus, creating a salience landscape of the child's environment. In children with autism, the connections between the sensory areas and the amydala may be altered, resulting in extreme emotional responses to trivial events and objects." (p. 68)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific American</u>, <u>296</u>(5), pp. 62-69.

When the child with Autism Spectrum Disorder looks into another's eyes:

- 1. The "...altered connection between the cortex and amygdala distorts (the) child's response.
- 2. (The) Amygdala triggers the autonomous nervous system, raising heart rate.
- 3. (As a result the) Child looks away to reduce stress." (p. 68)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.



"People with autism show reduced mirror neuron activity in the inferior frontal gyrus, a part of the brain's premotor cortex, perhaps explaining their inability to assess the intentions of others. Dysfunctions of mirror neurons in the insula and anterior cingulate cortex may cause related symptoms, such as the absence of empathy, and deficits in the angular gyrus may result in language difficulties. People with autism also have structural changes in the cerebellum and brain stem." (p. 65)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific American</u>, <u>296</u>(5), pp. 62-69.

What To Do With Your Eyes When You Have Eye Gaze Problems

- People stare at you because they want to know if you are interested in them.
- Look toward peoples' eyes and cheekbones.
- Use media to disconnect sound from faces.
- If you don't use eye contact others will emotionally leave you.

Garcia Winner, M., and Crooke, P. (2011). <u>Social Thinking At Work: Why</u> <u>Should I Care</u>. San Jose, CA: Social Thinking.



Relaxation Tools

> Take a break Sit by self > Talk to someone > Stretch Deep breaths Exercise > Sports "Creative Destruction" Taking out the trash

Kevin T. Blake, Ph.D., P.L.C. All Rights Reserved Drawing
Solitude Massage
Reading
Repetitive Action
Sleep

Scapra, A., Reyes, N, and Attwood, T. (2013). Cognitive-Behavioral Therapy for Stress and Anger Management in Young Children with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism</u> <u>Spectrum Disorders</u>. New York, NY: Guilford.

CBT & ASD

"Thus, CBT, when adapted for the special needs of youth with ASD, is potentially effective at decreasing anxiety in this population, but more replication is necessary to establish the efficacy of these programs" (p. 91).

Green, S.A., and Wood, J.J. (2013). Cognitive-Behavioral Therapy for Anxiety Disorders in Youth with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT</u> <u>for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Creating More Oxytocin



Interactive touch between humans can produce more oxytocin in the brain. It can even increase one's level of trust.

Morhenn, V.B., Park, J.W., Piper, E., and Zak, P.J. (November, 2008). Monetary Sacrifice Among Strangers is Mediated by Endogenous Oxytocin Release After Physical Contact. <u>Evolution and Human Behavior</u>, <u>29</u> (6), pp. 375-383.

- Temple Grandin's "squeeze machine"
- Hirstein's "squeeze vest" Elmhurst College
- Risperidone or MDMA (ecstasy)
- Biofeedback
- Under Armor-- Compression underwear: <u>www.underarmour.com</u>
- Grandin, T (1992). Calming Effects of Deep Touch Pressure in Patients with Autism, College Students, and Animals. Journal of Child and Adolescent Psychopharmacolgy, <u>1</u> (2). From website: <u>www.grandin.com/inc/squeeze.html</u>
- Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. <u>Scientific American</u>, <u>296</u>(5), pp. 62-69.
- Author (1997). Use of "Atypical" Neuroleptics in the Treatment of PDDs. <u>MedScape Psychiatry & Mental</u> <u>Health e Journal</u>, <u>2</u> (4): <u>www.medscape.com/viewarticle/430897_5</u>

THE ABOVE ARE EXPERIMENTAL TREATMENTS!!!!!





Memory Disorders

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Memory Problems Everyone Has

- Transience: problems accessing memory over time
- Absent-mindedness: lapses in attention
- Blocking: tip of the tongue experience
- Suggestibility: the incorporation of misinformation into memory
- Bias: altering memory to fit beliefs
- Misattribution: believing you heard something you didn't.

Murray, B. (October, 2003). Convention Award-Winner Daniel Schacter Explained the Ways Memory Tricks Us. <u>Monitor On Psychology</u>, <u>34</u> (9), pp. 28-29.

Schacter, D. (2001). <u>The Seven Sins of Memory: How the Mind Forgets and Remembers</u>. New York, NY: Houghton Mifflin.

Memory Disorders

Dysnomia:



- "...is a word-finding problem in remembering and expressing words." (p. 373)
- "Dyslexic people are slower at naming series of various types of familiar stimulus items— objects, colors, numbers, letters." (p. 29)
- This is part of the Rapid Automatized Naming Deficit, or "Double Deficit" of SLD-dyslexia.
- Lerner, J. (1997). <u>Learning Disabilities: Theories Diagnosis, and Teaching Strategies, 7th Edition</u>. Boston, MA: Houghton Mifflin.
- Clark, D.B. (1988). <u>Dyslexia: Theory and Practice of Remedial Instruction</u>. Parkton, MD: York.

Wolf, M., and O'Brien, B. (2001). On Issues of Time, Fluency, and Intervention. In A.J. Fawcett (Ed.), <u>Dyslexia: Theory and Good Practice</u>. Philadelphia, PA: Whurr, pp. 124-140.

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Two General Memory Systems

- <u>Declarative Memory</u>: Remembering the what, i.e. Facts and Events
- **<u>Procedural Memory</u>**: Knowing how to do something
- Proficient Reading is a skill and is a product of procedural memory.
- With procedural memory robust gains in knowledge are made after training is terminated.
- Train until the person's new behavior plateaus, stop training then allow to sleep. The next day they will have improved behavior and less errors.



Two Memory Systems (Continued)

- This will not happen if the person is not allowed to sleep and/or if they are then taught a competing task.
- If the training situation is considered novel, learning will continue to increase.
- Karni, A. (November 3, 2004). <u>Brain Basis of Skill Acquisition and Learning: How do they</u> <u>Relate to Reading?</u> Paper presented during the Neural Basis of Reading and Other Forms of Skills Acquisition Symposium of the 55th Annual International Dyslexia Association Conference, Philadelphia, PA, Session W-1.
- Karni, A., Tanne, D., Rubenstein, B.S., Askensay, JJ., and Saji, D. (1994). Dependence on REM Sleep of Overnight Improvement of A Perceptual Skill. Science, 265 (5172), pp. 679-682.



Sleep and Memory



- "...sleep allows us to process and retain new memories and skills." (p. 58)
- Deprive sleep/block training improvement in skill
- "Evidence for sleep's effect on declarative memory is much weaker than its effect on procedural memory." (p. 59)

Winerman, L. (January, 2006). Let's Sleep On It. <u>Monitor On Psycholoy</u>, <u>37</u> (1), pp. 58-60.

Stickgold, R. (2005). Sleep-Dependent Memory Consolidation. <u>Nature</u>, <u>437</u> (7063), pp. 1272-1278.

SLD-Dyslexia May Be Partially a Disorder of Procedural Memory

"Deficits in dyslexia are attributed to an intact declarative learning system combined with an impaired procedural learning system –a network that includes prefrontal language systems, basal ganglia, parietal and cerebellar structures." (p. 135)

Nicolson, R., and Fawcett, A. (2007). Procedural Learning Difficulties: Reuniting the Developmental Disorders. <u>Trends in Neuroscience</u>, <u>30</u> (4), pp. 135-141.
 Nicolson, R. I., and Fawcett, A.J. (2008). <u>Dyslexia, Learning and the Brain</u>. Cambridge, MA: MIT Press.

SLD-Dyslexia May Be Related In Part To A Sleep Disorder

"To our knowledge, this is the first study designed to analyze sleep architecture and EEG power spectra of the entire sleep in children with dyslexia. The main result of this study is the clear increase of spindle activity and sigma power in dyslexic subjects which seems to be correlated with their degree of dyslexic impairment. These findings, never reported before in the literature, seem to be consistent with the most recent reports on the role of sleep and of specific phasic events during non-rapid eye movement (NREM) sleep on learning and memory."

Bruin, O. et al. (October 1, 2009). Sleep Spindle Activity Is Corrlated With Reading Abilities In Developmental Dyslexia. <u>Sleep</u>, <u>32(10)</u>, 1333-1340.

"Face Blindness"





Prosopagnosia Defined

"Prosopagnosia is a cognitive disorder characterized by a severe deficit in face recognition, which cannot be attributed to lower-level visual problems, higher-level semantic impairments or cognitive alterations such as mental confusion or amnesia. **Prosopagnosics can normally recognize that a** particular visual stimulus is a face, but they cannot discriminate between different faces, and hence cannot recognize faces of familiar people..."

Prosopagnosia Defined

"...This impairment is severe, and includes not only the faces of close friends and acquaintances, but also family members, siblings, spouses and, in some cases, even their own face. However, prosopagnosics can identify people using alternative cues to recognition, such as hairstyle, clothing, voice or gait. Importantly, this indicates that prosopagnosia is essentially a disorder of visual perception, and general semantic knowledge about familiar people remains intact and accessible from other modalities" (p. 59).



There are two types of prosopagnosia:

Acquired Prosopagnosia

Developmental Prosopagnosia

Face Processing Ability

Face processing ability differs greatly across the population and those with prosopagnosia may be at the lower end of the continuum.

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
 - Autism Spectrum Disorder

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

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. <u>Cognitive Neuroscience and Neuropsychology. 11</u> (1), 79-82.

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

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

Multisensory Processing in ASD

- Found that ASD children did not integrate multisensory (auditory-somatosensory) stimuli as well as nondisabled children.
- Will next investigate Sensory Integration Training for efficacy given these results.
- Molholm stated ASD children have difficulty simultaneously processing faces and voices.
- Russo, N., Foxe, J.J., Brandwein, A.B., Gomes, T., Altschuler, H., Molholm, S. (October, 2010). Multisensory Processing with Autism: High-Density Electrical Mapping Auditory-Somatosensory Integration. <u>Autism Research</u>, <u>3</u> (5), 253-267.
- Hamilton, J. (June 2, 2011). <u>Looking for Early Signs Of Autism In Brain Waves</u>. Washington, DC: National Public Radio: <u>http://www.npr.org/2011/06/02/136882002/looking-for-early-signs-of-autism-in-brain-waves</u>

Rajarshi (Tito) Mukhopadhyay



"In order to get a permanent impression of someone's face, I needed some time. How much time? It depends on how much interaction with the voice generating from the face has with me." He identifies people by their voice.

Mukhopadhyay, T.R. (2011). <u>How Can I Talk If My Lips Don't Move? Inside My</u> <u>Autistic Mind</u>. New York, NY: Arcade.

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Children and Facial Facial Recognition

"...investigations suggest that adult-like face recognition performance is in fact reached by five years age, but lower levels of attention, concentration and memory, and a greater susceptibility to demand characteristics, explain why children perform at a poorer level in face recognition experiments" (p. 121).

Children and Facial Recognition

The face processing system continues to develop through adolescence and until about age 30.

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). <u>A User's Guide to the Brain: Perception</u>, <u>Attention and the</u> <u>Four Theaters of the Brain</u>. New York, NY: Vintage.

Symptoms of Prosopagnosia



- Extreme difficultly 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). <u>www.faceblind.org/research</u>, p. 1 of 3.

Additional Symptoms of Prosopagnosia Found in Children And Adolescents



- It may take them months to recognize their classmates.
- School transition may be a problem.
- Extreme separation anxiety and stranger wariness may be present.
- Changes in the appearance of others (i.e., new glasses, new hair style, etc.) may be a problem.
- Feelings of frustration, isolation and embarrassment

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

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- The right Fusiform Gyrus typically does not respond to objects.
- This area reorganizes faces into wholes.
- The fusiform gyrus helps to differentiate between visually similar stimuli.
- Greebles-novices treat them as objects and experts treat them in a holistic manner.

Gauthier, I. (November 3, 2004). <u>Face Processing: Is It Hard-wired or Learned? Evidence</u> <u>from Brain Imaging Studies</u>. Paper presented at the 55th Annual International Conference seminar, *The Neural Basis of Reading and Other Forms of Skill Acquisition,* Philadelphia, PA, Session: W-1.

Gauthier, I., and Tarr, M.J. (1997). Becoming a "Greeble" Expert: Exploring Mechanisms for Face Recognition. <u>Vision Research</u>, <u>37</u> (120), 1673-1682.

Where The Brain Processes Faces

- It appears the N170 (A.K.A.: M170) waves in the brain are related to the encoding of facial processing.
- The occipital facial area seems to be involved in very early visual face analysis that encoded facial parts.
- The fusiform face area processes facial identity.
 The superior temporal sulcus processes facial expressions and eye gaze direction.

Developmental

Prosopagnosia (WEBSITE: 134)



- "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. <u>Scientific American: Mind</u>, <u>18</u> (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. <u>American</u> <u>Journal of Medical Genetics, Part A</u>, <u>140A</u> (15), Pages 1617-1622 (From abstract).

Face Perception



- Adults and adolescents with Autism lack specialization for faces in the right fusiform gyrus, they use it for other things: toilet plungers, etc.
- Left fusiform gyrus ("Word Form Area") responds somewhat to strings of letters of the same font and to real words not non-words.
- Letters are not processed like shapes or strings.

Gauthier, I. (November 3, 2004). <u>Face Processing: Is It Hard-wired or Learned? Evidence</u> <u>from Brain Imaging Studies</u>. Paper presented at the 55th Annual International Conference seminar, *The Neural Basis of Reading and Other Forms of Skill Acquisition,* Philadelphia, PA, Session: W-1.
Face Perception



- The Fusiform Face Area (FFA) responds much more to faces than to other objects.
- Nine different labs have found that those with Autism Spectrum Disorders have a hypoactivation of the FFA when viewing faces.
- Developmental Prosopagnosia and Developmental Agnosia are separate disorders.
- Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. <u>International Journal of Developmental Neuroscience</u>, <u>23</u>, 125-141.
- Duchaine, B. and Nakayama, K. (2005). Dissociations of Face and Object Recognition in Developmental Prosopagnosia. <u>Journal of Cognitive Neuroscience</u>, <u>17</u>, 249-261 (From Abstract).

ASD Vs Developmental Prosopagnosia



"Thus, although investigation of individuals who suffer from face-processing impairments alongside SDDs (socio-developmental disorder, sic.) is also of interest in informing our knowledge about other factors that may influence face recognition ability, the bulk of the available evidence supports the viewpoint that DP (developmental prosopagnosia, sic.) should be considered as an independent condition" (p. 127).*

*Bate, S. (2013). <u>Face Recognition & Its Disorders</u>. New York, NY: Palgrave Macmillan. Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Whose at Risk for Prosopagnosia?



SLD and AD/HD people often have problems remembering faces.

Roffman, A.J. (2000). <u>Meeting The Challenge of Learning</u> <u>Disabilities In Adulthood</u>. Baltimore, MD: Brookes.

Those with Noverbal Learning Disorders/Social Communication Disorder . These may be similar in etiology as the face blindness problems in ASD.

Liddell, G.A. and Rasmussen, C. (August, 2005). Memory Profile of Children with Nonverbal Learning Disability. <u>Learning Disabilities</u> <u>Research and Practice</u>, <u>20</u> (3), 137-141 (From abstract).

Questions for Face Processing Assessment

- □ Has the person ever suffered a brain injury?
- **Do they have ASD or a related disorder**
- Does anyone in their biological family suffer from ASD or a related disorder
- Have they suffered from an uncorrected vision problem for several months?
- Does any biological relative have DP?
- **Do they have a neuropsychiatric disorder?**
- Are there any memory, cognitive or perceptual deficits?

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

Face Processing Assessments

Benton Facial Matching Test (BFRT) Cambridge Face Perception Test (CFPT) Glascow Face Matching Test (GFMT) Cambridge Face Memory Test (CFMT)

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

How to Assess Developmental Prosopagnosia

Cambridge Face Memory Test



Fest 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. <u>Neuropsychologia</u>, <u>44</u>, pp. 576-585. From web site:

www.faceblind.org/people/duchaine06neuropsychologia.pdf#search=%22Cambridge%20F ace%20Memory%20Test%22.

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



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. <u>Scientific American: Mind</u>, <u>18</u> (4), 68-73.



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Treatment of Prosopagnosia



"A treatment programme on training in perception, and analysis of facial features and familiar-face naming was conducted. Treatment resulted in excellent face naming for familiar faces, a decreased reliance on nonfacial cues and a reduction in the tendency to misidentify unfamiliar faces as family members." (p. 1 of 2)

Brunsdon, R., Coltheart, M. Nickels, L. and Jay, P. (September 2006). Developmental Prosopagnosia: A Case Analysis and Treatment Study. <u>Cognitive</u> <u>Neuropsychology</u>. <u>23</u> (6), 822-840 (From abstract).

Training and Developmental Prosopagnosia

"We designed a task that required discriminating faces by their spatial configuration and, after extensive training, prosopagnosic MZ significantly improved at face identification. Event-related potential results revealed that although the N170 was not selective for faces before training, its selectivity after training was normal. fMRI demonstrated increased functional connectivity between ventral occipital temporal face-selective regions (right occipital face area and right fusiform face area) that accompanied improvement in face recognition. Several other regions showed fMRI activity changes with training; the majority of these regions increased connectivity with faceselective regions. Together, the neural mechanisms associated with face recognition improvements involved strengthening early face-selective mechanisms and increased coordination between face-selective and nonselective regions, particularly in the right hemisphere" (p. 1790) DeGutis, J. et al. (2007). Functional Plasticity in Ventral Temporal Cortex Following

Cognitive Rehabilitation of a Congenital Prosopagnosic. <u>Journal of Cognitive</u> <u>Neuroscience</u>, <u>42</u>, 1790-1802.

Treatment of Prosopagnosia: "Are you my Mother?"

- Encourage the person to look at peoples faces when socializing.
- Introduce new people slowly and emphasize their characteristics: "Say hi to Billy with the red hair and freckles."
- Have adolescents 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. <u>Scientific American Mind</u>, <u>18</u> (4), 68-73.

Computer Programs to Treat Prosopagnosia (WEBSITE: 135)

- "Let's Face It!" Face Recognition Program and workbook for children and adolescents with Autism Spectrum Disorders (University of Victoria Brain and Cognition Lab & the Yale Child Study Center)
- Teaches facial recognition and emotion recognition in 20 hours!

From: <u>http://web.unic.ca/~letsface/letsfaceit/index.php</u>

It is FREE!

Mnemonic Techniques to Remember Faces

Lucas, J. (2000). <u>Names and Faces Made Easy:</u> <u>The Fun Way To Remember People</u>. Lucas.





Executive Functions

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Executive Function Memory Problems



- Working Memory:
 - "...denotes a person's information-processing capacity" (p. 4-5)
 - Is the "memory buffer in the brain."
 - It allows for "theory of mind."

- "Remembering so as to do." (non-informational)

- Wechsler Adult Intelligence Scale- Third Edition, Wechsler Memory Scale-Third Edition (1997). <u>Technical Manual</u>. San Antonio, TX : Psychological Corporation.
- Brown, T. E. (October 11, 2001). <u>Assessment and Treatment of Complicated ADHD Across the Lifespan</u>. Seminar Presented at the Arizona Association of School Psychologists 33rd Annual Conference, Mesa, AZ.
- Frith, C. D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. <u>Science</u>, <u>286</u>, pp. 1692-1695.
- Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.

Executive Functioning & Social Abilities



- Stage 1: Problems Encoding Social Information-EF level-Traditional Social Skills programs typically don't work because the child cannot connect behavior to the situation.
- Stage 2 and afterward: Problems generating responses-easier to remediate with Traditional Social Skills programs.

 Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. <u>Perspectives</u>, <u>29</u> (2), p. 20-22.
 Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>, New York, NY: Springer.

Working Memory and AD/HD



 "AD/HD kids are not 'clueless'. They're 'cueless'."

Goldstein, S. (November 20, 1998). <u>Pathways to</u> <u>Success: Evening the</u> <u>Odds in the Treatment</u> <u>of Attention-Deficit</u> <u>Hyperactivity Disorder</u>. Seminar presented in Tucson, AZ.

Executive Functions and AD/HD

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- It appears the problems those with AD/HD have with academic achievement and social communication and behavior are related to EF difficulties.
- This does not appear to be the case in those with ODD and/or CD without AD/HD.
- Clark, C., Prior, M. and Kinsella, G. (2002). The Relationship Between Executive Function Abilities, Adaptive Behavior, and Academic Achievement in Children with Externalizing Behavior Problems, Journal of Child Psychology and Psychiatry, 43, p. 785-796. From: (June, 2003). Executive Function and Communication Difficulties May Contribute to Adaptive Behavior Problems. <u>ADHD Report</u>, p. 12-13.
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Summary of Barkley's Theory

- Step 1: Response Delay
- Step 2: Prolongation



- Step 3: Rule Governed Behavior
- Step 4: Dismemberment of the Environment
- Barkley, R.A. (1997). <u>ADHD and the Nature of Self-Control</u>. New York, NY: Guilford.
- Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford.
- Barkley, R.A. (2012). <u>Executive Functions: What They Are, How They Work, and</u> <u>Why They Evolved</u>. New York, NY: Guilford.

Brown's Theory Summarized

- 1. ACTIVATION
- 2. FOCUS
- 3. EFFORT
- 4. EMOTION
- 5. MEMORY
- 6. ACTION



Brown, T.E. (2002). <u>Social Ineptness & "Emotional Intelligence" in ADHD</u>. Paper Presented at the 14th Annual CHADD International Conference, Miami Beach, FL, October 17-19.

Brown, T. E. (2013). <u>A New Understanding of ADHD in Children and Adults: Executive</u> <u>Function Impairments</u>. New York, NY: Routledge.





<u>The Multimodal Treatment Study of</u> <u>Children with Attention Deficit</u> <u>Hyperactivity Disorder</u>

(MTA Study = Multimodal Treatment Assessment of AD/HD)

1999

MTA STUDY

Jensen, P.S., et al. (February, 2001). Findings From the NIMH Multimodal Treatment Study of ADHD (MTA): Implications and Applications for Primary Care Providers. Journal of Developmental and Behavioral Pediatrics, 22 (1), pp. 60-73.





- Mid-1990s
- 579 AD/HD, Combined Type Children
- Demographics matched the 1990 US Census
- Randomly assigned to one of four groups
- After assigned to group each child was thoroughly reassessed to make sure they were AD/HD, CT

- Group 1: "Experimental Medication"
- (WEBSITE: 136-141; for Medication Concerns)
 - Three medications used
 - Methyltphenidate (Ritalin)
 - D Amphetamine (Dexedrene)
 - Pemoline (Cylert)**
 - If medication one did not work or there was a side effect, changed to the next medication and so on.

 Each month parent and child was seen by physician. Child checked for response to treatment and side effects. Each month questionnaires given to parents and teachers.



- Group 2: Behavior Modification
 - Parents taught how to use token economies at home and daily report cards, teachers taught how to teach AD/HD child, how to use token economies in the classroom, and daily report cards, AD/HD children were sent to special camp for AD/HD kids, parents and teachers given "800" number for consultation 24/7, continued for 14 months!

• Group 3: "Experimental Medication Plus Behavior Modification Group"





• Group 4: "Community Services"

- The parents are told their child has Combined Type AD/HD and they are encouraged to go out to their community and get what services they want for their child...This was the "Control Group."
 - Medication, aroma therapy, etc.

MTA Study



- Medication Management Treatment Group did best with a 50% decline in symptoms.
- Medication with Behavioral Modification Group did no better.
- Behavior Modification Group did better than placebo.
- Community Treatment only had 25% decline in symptoms.
- Medication helps with social interaction.

NIMH Research Treatment for Attention Deficit Hyperactivity Disorder (ADHD): The Multimodal Treatment Study – Questions and Answers. From website: <u>www.nimh.nih.gov/chilfhp/mt.aqu.cfm</u>

MTA Study



"In that study (MTA Cooperative Group, 1999) psychosocial treatment alone was very poor compared to medication effects and psychosocial treatment with methylphenidate was no better than methylphenidate alone...Medication was found to reduce negative social interactions both by the treated children and by their peers toward the child with ADHD". (p. 55)

Semrud-Clickman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, p. 55.

AD/HD Response Rate to Stimulant Titration

"If methylphenidate (sic., ritalin) is not effective or if there are side effects then the next alternative is dextroamphetamine (sic., dexedrine)...If the diagnosis has been appropriately made, the response rate is about 80% to 96%."

Mahoney, W. (2002). The Use of Stimulant Medication in the Treatment of Attention Deficit Hyperactivity Disorder. <u>Pediatrics & Child Health</u>, <u>7</u> (1), pp. 693-696; From website: <u>www.ncbi.nlm.nih.gov/pmc/articles/PMC2796531</u>.



AD/HD and Medication

"When the discussion is specifically reserved to symptom relief and impairment reduction for ADHD, this series of articles adds to an impressive body of scientific literature demonstrating that medication treatment, in the case of methylphenidate, is cost efficient and may be all that is needed for good responders." (p. 3)

Goldstein, S. (December, 2004). Do Children with ADHD Benefit from Psychosocial Intervention, <u>ADHD Report</u>, <u>12</u> (6), 1-3.

What the Longitudinal Studies & The MTA Study 8 Year Follow-Up Say About AD/HD Treatment

By far the best results come from uninterrupted treatment with medication and behavioral techniques throughout life.

- Swanson, J., Hinshaw, S., Hechtman, L., and Barkley, R. (November 9, 2011). <u>Research</u> <u>Symposium I: Montreal Study; Milwaukee Study; Berkley Girls with ADHD Study</u> (<u>BGALS</u>). Symposium presented at the 24th Annual CHADD International Conference, November 8-10, 2012, Burlingame, CA.
- Molina, B.S.G., et al. (May, 2009). The MTA at 8 Years: Prospective Follow-up of Children Treated for Combined-Type ADHD in a Multisite Study. Journal of the American Academy of Child & Adolescent Psychiatry. <u>48</u>(5), 484-500. From website: <u>http://www.jaacap.com/article/S0890-8567%2809%2960066-6/abstract</u>.

ADULT AD/HD & TREATMENT (Website: 142-144)

- Cognitive Behavioral Therapy works with AD/HD adults because they have better developed frontal lobes than children. They still need medication, however.
- This means adults with AD/HD can get some good out of social skills training whereas AD/HD children typically do not.
- Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford.
- Ramsay, R. J. (2010). <u>Non-Medication Treatments for Adult ADHD</u>. Washington, DC: American Psychological Association.

CBT For Adult AD/HD References

Solanto, M.V. (2011). <u>Cognitive Behavioral</u> <u>Therapy for Adult ADHD: Targeting Executive</u> <u>Dysfunction</u>. New York, NY: Guilford.

Ramsay, J.R. and Rostain, A.L. (2008). <u>Cognitive</u> <u>Behavioral Therapy: An Integrative</u> <u>Psychosocial and Medical Approach</u>. New York, NY: Routledge.

Using CBT with AD/HD and/or ASD Individuals (Appendix 1)

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CBT & ASD

- **Psychoeducation & include visual aids**
- **Rewards System**
- **Developing a hierarchy/exposure modules**
- □ Parent coaching
- **Playdates**
- □Social coaching
- Mentoring
- **School involvement**

Adaptive skills & Stereotyped interest modules

Green, S.A., and Wood, J.J. (2013). Cognitive-Behavioral Therapy for Anxiety Disorders in Youth with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Treatment of AD/HD Across the Age Span



- 1. Diagnosis
- 2. Psychoeducation about AD/HD
- 3. Medication
- 4. Accommodation

Barkley, R. A. (1998). <u>ADHD in Children, Adolescents, and Adults: Diagnosis,</u> <u>Assessment, and Treatment</u>. New England Educational Institute Cape Cod Symposia, August, Pittsfield, MA.

Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder</u>. New York, NY: Guilford, p. 6
Possible Alternative Treatment for Combined Type AD/HD (Website: 54-87)

- Working Memory Training:
 - Torkel Klingberg, M.D., Ph.D.
 - Karolinska Institute- Stockholm, Sweden
 - CogMed software company
 - AD/HD deficient in visual spatial working memory. Gets worse with age.
 - MAY help relieve executive functioning difficulties in Combined Type AD/HD.
 - More Research is needed!

Klingberg, T. (February, 2006). Training Working Memory. <u>AD/HD Report</u>, <u>14</u> (1), pp. 6-8.
 Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. <u>ADHD Report</u>, <u>14</u> (1), pp. 9-11.

Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.



Richard Abby on Working Memory

Things that disrupt Working Memory:

- Background noise
- Distraction
- Switching Attention
- Too much information to encode by rote
- Too much mental manipulation required to retain information
- Never encoding it into Long-Term Memory

What helps Working Memory:

- Silent environment
- > White noise
- Repeat over and over by rote
- Associating it with something in Long-term memory
- Rhyming, Mnemonics, chunking.
- Abby, R., et al (October 27, 2010). <u>Working Memory,</u> <u>Learning and Interventions</u>. Paper presented at the 61st Annual International Dyslexia Association Conference, Phoenix, AZ, Session Symposium W1; Working Memory and Learning The Critical Link.

Memory and Testing

"...testing improves memory by strengthening keyword associations and weeding out clues that do not work." (p. 13)

Anderson, A. (January/February, 2011). Why Testing Boosts Memory. <u>Scientific</u> <u>American Mind</u>, <u>21</u> (6), 13.

Self-Imagining for Better Memory

"Recent research has demonstrated that selfreferential strategies can be applied to improve memory in memory-impaired populations. However, little is known regarding the mnemonic mechanisms and relative effectiveness of self-referential strategies in memory-impaired individuals. This study investigated the benefit of a new self-referential strategy known as *self-imagination*, traditional selfreferential strategies, and non-self-referential strategies on free recall in memory-impaired patients with acquired brain injury and in healthy control respondents. The data revealed an advantage of selfimagining in free recall..."

Self-Imagining for Better Memory (Website: 145)

"...relative to all other strategies in patients and control respondents. Findings also demonstrated that, in the patients only, a self-referential strategy that relied on semantic information in self-knowledge was more effective than a self-referential strategy that relied on autobiographical episodic information. This study provides new evidence to support the clinical utility of self-imagining as a memory strategy and has implications for the future development and implementation of selfreferential strategies in memory rehabilitation". (p. 1)

"Try to imagine you are acting out this personality trait."(p. 3)

Grilli, M.D., and Glisk, E.L. (August 5, 2012). Imagining a Better Memory: Self-Imagination in Memory-Impaired Patients. <u>Clinical Psychological Science</u>, <u>20(</u>10), 1-7. From website: <u>http://cpx.sagepub.com/content/early/2012/10/02/2167702612456464.full.pdf+html</u>.

Treatments For Memory Disorders

- Mnemonics-memory tricks
- Diaries and Social Statements
- Technology-Watchminder Watch II, etc.www.addwarehouse.com, etc.
- Check for sleep disorders.*

• Nootropic Medications

Nosek, K. (1997). <u>Dyslexia in Adults: Taking Charge of Your Life</u>. Dallas, TX: Taylor.

Smith, L. and Godfrey, H.D.P. (1995). <u>Family Support Programs Rehabilitation: A Cognitive-</u> <u>Behavioral Approach to Traumatic Brain Injury</u>. New York, NY: Plenum.

- Barkley, R.A. (1998). <u>Attention Deficit Hyperactivity Disorder (Second Edition)</u>. New York, NY: Guilford.
- *Fawcett, A.J. (October 29, 2010). <u>Dyslexia, Dysgraphia and Procedural Learning Deficit</u>. Paper Presented at the 61st Annual International Dyslexia Association Conference, Phoenix, AZ (October 27-30, 2010), Session F5.
- Goldstein, S. and Goldstein, M. (1997). Drugs Affecting Learning, Attention, and Memory. In S. Goldstein (Ed.), <u>Managing Attention and Learning in Late Adolescence & Adulthood: A Guide for Practitioners</u>. New York, NY: John Wiley & Sons, pp. 327-373.



Good Resources for Mnemonic Techniques



- <u>www.doctormemory.com</u>
- Doctor memory
- Lucas, J. and Lorayne, H. (1974). <u>The Memory</u> <u>Book</u>. New York, NY: Ballantine.

- Watchminder 2
 - Vibrates to remind student of deadlines
 - It can remind them to check to see if they are "on task."



Available from:

www.watchminder.com/

- Record lectures with a digital recorder
- Available from:
 - Walmart
 - Best Buy
 - Staples, etc.



Digital Video Camera

Smart Phone Camera/Audio Recorder



- Personal Digital Assistant (PDA)
 Smartphone
- Time Management Organizer
 <u>www.FranklinCovey.com</u>







- Rolodex Organizer:
 <u>www.franklin.com</u>
- Livescribe Smartpen: <u>www.livescribe.com</u>





Brookstone
 Wireless
 Keyfinder:

<u>www.brookstone.com/</u> <u>Wireless-Key-</u> <u>Finder.html</u>



Professionals Who Can Help with Memory

- > AD/HD Coaches: <u>www.addbrain.com</u>
- Professional Organizers: <u>www.napo.net</u>
- Psychiatrists: <u>www.apa@psych.org</u>
- Psychologists: <u>www.apa.org</u>
- Masters Level Counselors: <u>www.nbcc.org</u>
- Social Workers: <u>www.naswdc.org</u>
- Behavioral Neurologists: <u>www.anpaonline.org</u>
- Speech-Language Pathologists: <u>www.professional.asha.org</u>
- Association for Persons in Supported Employment (APSE): <u>www.apse.org</u>

Good Book on Treating Memory Problems

Dornbush, M.P. and Pruitt, S.K. (2009). <u>Tigers,</u> <u>Too: Executive Functions/Speed of</u> <u>Processing/Memory-Impact on Academic,</u> <u>Behavioral and Social Functioning of Students</u> <u>with ADHD, Tourette Syndrome and OCD:</u> <u>Modifications and Interventions</u>. Atlanta, GA: Parkaire.

Visual Spatial Processing Disorders

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DSM-5 Digression



Types of High Functioning Autism, Autism, Autism Spectrum Disorder, Asperger's Disorder, PDD, PDD-NOS:

1. Autism Spectrum Disorder

Author (May 18, 2013). <u>Diagnostic and Statistical Manual of Mental Disorders, Fifth</u> <u>Edition (DSM-5)</u>. Washington, DC: American Psychiatric Association, 50-59.

Author (2010). <u>Asperger's Disorder</u>. Washington, DC: American Psychiatric Association;

www.dsm5.org/Proposed/Revisions/Pages/proposedrevision.apx?rid=97#.

Author (2010). Autistic Disorder. Washington, DC: American Psychiatric Association;

www.dsm5.org/Proposed/Revisions/Pages/proposedresisions.apsx?rid=94.

Visual-Spatial Problems



- Spatial relations include qualities like size, distance, volume, order and time." (p.1)
- There are two types of spatial skills. Visual-spatial performance refers to using sight to discriminate differences. Motor-spatial performance refers to making the body move accurately and smoothly. Of course, many activities demand some combination of the visual-spatial and motor-spatial skill." (p. 5)

Stockdale, C. & Possin, C. (2001). <u>Spatial Relations and Learning</u>. Website: <u>www.Newhorizons.org/spneeds-arkspatial.html</u>, pp.1-24.

Visual-Spatial Problems



Difficulties with temporal and spatial relationships are related to problems in the right hemisphere. People with such difficulties have problems with processing information that is nonverbal in nature.

Berg, M. & Stockdale, C. (2001). <u>The Language of Space and Time</u>. Paper presented at the 52nd International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – <u>www.conventionrecordings.com</u>; St. Petersburg, FL, Session S-168.

Social (Pragmatic) Communication Disorder 315.39 (F89.89)

"...individuals who have significant problems using verbal and nonverbal communication for social purposes, leading to impairments in their ability to effectively communicate, participate socially, maintain social relationships, or otherwise perform academically or occupationally."

Closest diagnosis to NVLD in DSM-5?

Author (May, 2013). <u>Social (Pragmatic) Communication Disorder, Fact Sheet</u>. Washington, DC: American Psychiatric Association. From website: <u>http://www.dsm5.org/Documents/Social%20Communication%20Disorder%20Fa</u> <u>ct%20Sheet.pdf</u>.

Auditory NVLD?



Bellis (2002) wrote about how a person with NVLD may experience a subtype of Central Auditory Processing Disorder (CAPD) which causes problems in processing tone of voice and paralanguage and not the discrimination of speech sounds. This is also a right hemisphere problem.

Bellis, T.J. (2002). <u>When The Brain Can't Hear: Unraveling The Mystery of Auditory</u> <u>Processing Disorder</u>. New York, NY: Atria.

Visual-Spatial Working Memory and Combined Type AD/HD (WEBSITE: 54-87)

- Those with Combined type AD/HD have a significant problem with Visual-Spatial Working Memory.
- The RM program may help in improving visualspatial working memory: <u>www.cogmed.com</u>

Medication may, too.

- Klingberg, T., Fernell, E., Olesen, P.J., Gustafsson, P., Dalstrom, K., Gillberg, C., Fossberg, H. Westerberg, H. (2005). Computerized Training of Working Memory In Children With ADHD A Randomized, Controlled Trial. Journal of The American Academy of Child and Adolescent Psychiatry, <u>44</u>, 177-186.
- Gibson, B.S., Seroczynski, A., Gondoli, D.M., Braungart-Rieker, J. and Grundy, A.M. (In Press). Working Memory Training for Early Adolescents with Attention-Deficit Hyperactivity Disorders. Study conducted at the University of Notre Dame.

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, 3rd Edition. New York: Guilford.

Prosopagnosia of Facial Expressions

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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 states based on 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. <u>International Journal of Developmental Neuroscience</u>, <u>23</u>, 125-141.

ASD & Face Processing

"A range of face-processing deficits can present in **ASD.** Sometimes, individuals have problems recognizing facial identity, gaze direction, gender, expression and lip reading...Most importantly, nearly all individuals with ASD have problems interpreting emotional expression. For some individuals with ASD, the impairment in recognizing emotional expressions seems only to affect certain expressions, most notably fear" (p. 144).

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

ASD and Facial Decoding

"Deficits in facial emotion recognition have been found in individuals with ASD, possibly due to decreased functional connectivity among multiple brain regions in response to emotional faces" (p. 35).

Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning</u> <u>Autism Spectrum Disorders</u>. New York, NY: Guilford.

Problems Making the Appropriate Facial Expression to Match How One Feels and What is Appropriate to The Situation

People with AD/HD off medication.

Attwood's (2007) story of the boy with



ASD who saw his mother crying and asked, "What face do I make?" (p. 134)

Kuehle, H. (October 17, 2002). <u>Video Assissted Observation of Visual Attention and</u> <u>Motor Behavior for the Diagnosis and Determination of the Individual Stimulant</u> <u>Dosage in Children with AD/HD</u>. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

Attwood, T. (2007). <u>The Complete Guide to Asperger's Syndrome</u>. Philadelphia, PA: Jessica Kingsley, p. 135.

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). <u>A User's Guide to the Brain: Perception, Attention, and the</u> <u>Four Theaters of the Brain</u>. New York: NY: Vintage.

Children and Facial Expressions



"An early skill that has been found to be important for the development of additional social ability is the ability to understand and recognize facial expressions appropriately. These expressions allow the child to understand the other's mood reaction to their behavior and adapt accordingly...These skills develop early and have been found already present in the preschool years." (p. 7)

Semrud-Clickman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, p. 76.

ASD and Processing Facial Expressions

"Hypoactivation of the FFA and related 'social brain' areas in response to facial stimuli is one of the most consistently reported fMRI findings in autism. We have shown that activation in a range of brain areas, including the FFA, is significantly reduced in autism compared with controls in response to emotional versus neutral faces, and further more our findings indicate that the response within the FFA itself differs significantly between siblings and controls." (p. 6 of 7)

Spencer, M.D., Holt, R.J., Chura, L.R., Suckling, A.J, Calder, E.T., and Baron-Cohen, S. (2011). A novel functional brain imaging endophenotype of autism: the neural response to facial expression of emotion. <u>Translational Psychiatry</u>, 1, e19, doi:10.1038/tp.2011.18.

ASD and Processing Facial Expressions

"Our findings suggest that an atypical implicit response to facial expression of emotion may form the basis of impaired emotional reactivity in autism and in the broader autism phenotype in relatives. These results demonstrate that the fMRI response to facial expression of emotion is a candidate neuroimaging endophenotype for autism and may offer far-reaching insights into the etiology of autism" (p. 1 of 7).

Spencer, M.D., Holt, R.J., Chura, L.R., Suckling, A.J, Calder, E.T., and Baron-Cohen, S. (2011). A novel functional brain imaging endophenotype of autism: the neural response to facial expression of emotion. <u>Translational Psychiatry</u>, 1, e19, doi:10.1038/tp.2011.18.

Facial Expressions

Remembering Expressions:



- The non-disabled are "pre-wired" to find the human face and voice the most important stimuli in the world.
- Those with ASD don't look at the eyes they look at the mouth. Differentiated those with ASD from non-disabled 100% of the time.
 - Klin, A. (October 11-12, 2001). <u>Autism, Asperger's and the PDD Spectrum</u>. Seminar presented at the 33rd Annual Arizona Association of School Psychologists Conference, Mesa, AZ.
 - Volkmar, F.(April 23, 2003). <u>Asperger Syndrome: Clinical Features,</u> <u>Assessment, and Intervention Guidelines</u>. Seminar presented by New England Educational Institute, Phoenix, AZ

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. <u>Perspectives</u>, <u>29</u> (2), p. 20-22.
 Semrud-Clikeman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer.

Prosopagnosia Of Facial Expressions

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Facial Expression Recognition & Disorders



- Children with Nonverbal Learning Disorders and children with Specific Learning Disorder wave been found to have significant difficulty reading the facial expressions of others.
- Adolescents with Specific Learning Disorder have been found to have more difficulty Reading the facial expressions of others than those with Nonverbal Learning Disorder*

Facial Expression Recognition & Disorders



- Children with Specific Learning Disorder have trouble making basic facial expressions.**
- AD/HD Children have general difficulty decoding facial expressions. The more social interaction problems they have the more problems thy have decoding facial expressions. They particularly have trouble decoding facial expressions of anger. These decoding difficulties may make doing therapy with them more difficult.***
Facial Expression Recognition & Disorders



- AD/HD children were found to have significantly more difficulty with facial expression recognition than controls, particularly when emotional differentiation and contextual understanding are measured.****
- Children with ASD and Comorbid AD/HD have worse facial expression recognition than children with ASD, or AD/HD.****

References

*Bloom, E, and Heath, N. (March/April, 2010). Recognition, Expression, and Understanding Facial Expressions of Emotion in Adolescents With Nonverbal and General Learning Disabilities. <u>Journal of Learning</u> <u>Disabilities</u>, <u>43</u>(2), 180-192. doi:10.1177/0022219409345014.

- **El-Haddad, C., and Laouris, Y. (2011). The Ability of Children with Mild Learning Disabilities to Encode Emotions through Facial Expressions. <u>Lecture Notes in Computer Science</u>, <u>6456</u>, 387-402.
- ***Pelc, K., et al. (August 2006). Recognition of Emotional Facial Expressions in Attention-Deficit Hyperactivity Disorder. <u>Pediatric Neurology</u>, <u>35(2)</u>, 93-97.
- ****Lee, J.Y., et al. (June, 2013). Difficulty in Facial Emotion Recognition in Children with ADHD. <u>Journal of The Korean Academy of Child and</u> <u>Adolescent Psychiatry</u>, <u>24</u>(2),83-89.
- *****Oerlemans, A.M., et al. (July, 2013). Recognition of Facial Emotion and Affective Prosody in Children with ASD (+ADHD) and Their Unaffected Siblings. <u>European Child and Adolescent Psychiatry</u>, DOI: 10.1007/s00787-013-0446-2.

Assessment for Face Perception

Simon Baron-Cohen's Tests:

- Faces Test
- Eyes Test (Adult)
- Eyes Test (Child)
- Cambridge Mindreading (CAM) Face-Voice Battery
- Empathy Quotient (EQ) (Adult)
- Empathy/Systemizing (EQ-SQ) (Child)
- And many others...

Downloadable from:

www.autismresearchcentre.com/tests/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/CATS.html.

Treating Problems Reading Facial Expressions

- Volkmar, F. (April 23, 2003). <u>Asperger Syndrome: Clinical Features</u>, <u>Assessment, and Intervention Guidelines</u>. 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. <u>Vision Research</u>, <u>37</u> (12), 1673-1682.



• FACIAL EXPRESSIONS CAN BE

<u>TAUGHT!</u>

Computer Programs to Treat Prosopagnosia (WEBSITE: 146)



Baron-Cohen, S. (2003). Mind Reading: An Interactive Guide To Emotions. Philadelphia, PA: Jessica Kingsley.

"Harry Potter" teaches facial expressions.

Baron-Cohen, S., Drori, J., Harcup, C. (2009). <u>The</u> <u>Transporters (USA Version)</u>. London, England: Changing Media Development: <u>www.thetransporter.com</u>

"Thomas the Tank-Engine" teaches faces.



Computer Programs to Treat Prosopagnosia



- "Gaining Face": <u>www.StoneMountainSoftware.com</u>
- Paul Ekman, Ph.D. ("Lie to Me"/SPOT Surveying Passengers by Observational Techniques) CD ROMS: Micro Expression Training Tool (METT)
 Subtle Expression Training Tool (SETT)
 Repeated presentations of METT & SETT to those with Autism Spectrum Disorders



Available from: www.paulekman.com

Improving Facial Recognition in ASD

"Attempts to improve both facial identity and facial expression recognition deficits in ASD using computerized intervention programmes have met with much success" (p. 196).

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

Treating Problems Making & Reading Facial Expressions

- Cognitive Affective Training-Faces and Feeling Words: <u>www.CAT-kit.com</u>
- Student Handout: Emotions and Facial Expressions – From: McAfee, J. (2002). <u>Navigating the Social World</u>. Arlington, TX: Future Horizons, pp 83-84.



Ekman, P., & Friesen, W.M. (2003). <u>Unmasking</u> <u>The Face: A Guide To Recognizing Emotions</u> <u>From Facial Cues</u>. Cambridge, MA: Malor Books.

Ekman, P. (2003). <u>Emotions Revealed:</u> <u>Recognizing Faces and Feelings to Improve</u> <u>Communication and Emotional Life</u>. New York, NY: Time Books.

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Oxytocin and Prosopagnosia



"Very recently research has indicated an alternative manner in which face-processing skills can temporarily be improved: Using Intranasal inhalation of the hormone oxytocin. Oxytocin is naturally produced and broken down within the human body, and is involved in regulation of basic social and reproductive behaviors, such as cohabitation, gestation and breastfeeding..."

Oxytocin and Prosopagnosia



"...Recently, synthetic forms of oxytocin have been manufactured that can be nasally inhaled, and these sprays have been used in studies that have examined whether oxytocin can improve face-processing abilities in both health and impaired patients" (p. 195).

Bate, S. (2013). Face Recognition & Its Disorders. New York, NY: Palgrave Macmillan.

ASD Wearable Prosthetic



"We describe a novel wearable device that perceives and reports on social-emotional information in real-time human interaction. Using a wearable camera, combined with machine perception algorithms, the system records and analyzes the facial expressions and head movements of the person with whom the wearer is interacting. We propose the application of the social-emotional prosthetic to assist the growing number of individuals diagnosed with Autism..."

ASD Wearable Prosthetic (WEBSITE: 147)



El Kaliouby, R., Teeters, A. and Picard, R.W. (MIT Media Lab) (No Date). <u>An</u> <u>Exploratory Social-Emotional Prosthetic for Autism Spectrum Disorders</u>. From website: <u>www.affect.media.mit.edu/pdfs/06.kalioby-teeters-picard-bsn.pdf</u>. More information from: kaliouby,alea,picard@media.mit.edu

Dogs & Social Interaction (Appendix 2)

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Dogs, AD/HD, & ASD

- When the therapy dog was present, the children (with ASD, sic.) were significantly more focused, more playful, and more aware of interactions than either of the other conditions (stuffed dog, or ball present)" (p. 185).
- Johnson, R.A. (2011). Animal-Assisted Interventions In Health Care Contexts. In P. McCardle, McCune, S., J.A. Griffin and Maholmes, (Eds.), <u>How Animal Affect Us: Examining The</u> <u>Influence of Human-Anial Interaction on Child Development and Human Health</u>. Washington, DC: American Psychological Association.
- "Results suggest that CAI (Canine Assisted Intervention, Sic.) offers a novel therapeutic strategy that may enhance cognitive-behavioral interventions for children with ADHD".
- Schuck, S.E.B., et al. (September 23, 2013). Canine-Assisted Therapy for Children With ADHD: Preliminary Findings From The Positive Assertive Cooperative Kids Study. <u>Journal of</u> <u>Attention Disorders</u>, doi: 10.1177/1087054713502080.

Emotional Seeing Eye Dogs



- 4Paws For Ability
 253 Dayton Avenue
 Xenia, OH 45385
- Training Center: 937-374-0385
- Website:

www.4pawsforability.org

Dogs may have a rudimentary mirror neuron system!

Blakeslee, S. (January 10, 2006). Cells That Read Minds. New York Times; From website: <u>www.nytimes.com/2006/01/10/science/10mirr.html?pagewanted=1&_r=1</u>.

Other Methods of Learning Facial Expressions

- Watch children's shows like <u>Barney</u> and <u>Sesame</u> <u>Street</u> and observe the difference between the facial expression reactions of children and adults.
- Watch TV with the sound turned off and look at the face.
- You can see extreme emotions on soap operas, animated movies (i.e., Toy Story) claymation (<u>Wallace and Grommit</u>).

Garcia Winner, M., and Crooke, P. (2011). <u>Social Thinking At Work: Why Should I</u> <u>Care</u>. San Jose, CA: Social Thinking.



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Facial Expression Training & ASD



- "Even when people with autism spectrum disorders can figure out what someone's eyes or face conveys, they do so in a different way than everyone else, which may be less efficient or take more time." (p. 62)
- The non-disabled use the temporal lobe and fusiform gyrus to decode facial expressions.

Ozonoff, S., Dawson, G. and McPartland, J. (2002). <u>A Parent's Guide to Asperger</u> <u>Syndrome and High – Functioning Autism</u>. New York, NY: Guilford.

AD/HD and Making Facial Expressions

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Facial Expression and Social Ability



 Regarding facial expressions in children and adults with AD/HD Kuhle, Hoch, Rautzenberg and Jansen (2001) concluded, "Altogether, ... the facial expressions, are uncontrolled and jerky and are often wrongly dimensioned in time and space." (p. 6)

Kuhle, H.J., Hoch, C., Rautzenberg, P. and Jansen, F. (2001). Short-Term Video-Based Observation of Behavior with Special Reference to Eye-Contact, Facial Expression and Motor Activity in Diagnosis and Therapy of Attention Deficiency/ Hyperactivity Syndrome (ADHS). (First Published in): <u>Praxis der Kinderpsychologie und Kinderpsychiatrie 50: 607-621.</u> Obtained from: Kuehle, H. (October 17, 2002). <u>Video Assisted Observation of Visual</u> <u>Attention and Motor Behavior for the Diagnosis and Determination of the</u> <u>Individual Stimulant Dosage in Children with AD/HD</u>. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

Facial Expressions and AD/HD



- AD/HD children's eyes drift away from those they are in conversation with.
- This usually interrupts the flow and their comprehension of the conversation.
- Often parents feel rejected by AD/HD children when they do this.

Kuehle, H.J., Hoch, C and Jansen, F. (2002). <u>Video Assisted Observation of Visual</u> <u>Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior</u> for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). <u>Video Assisted Observation of Visual Attention</u> and Motor Behavior for the Diagnosis and Determination of the Individual <u>Stimulant Dosage in Children with AD/HD</u>. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

Facial Expressions and AD/HD

- AD/HD children smile abruptly.
- There is little or no transition between emotional states.
- Sometimes their facial expression bleeds over into the next emotional state.
- Expression of emotion often appears exaggerated. The quality of expression can be limited due to this.
- Even body movements are jerky and uncontrolled.

Kuehle, H.J., Hoch, C. and Jansen, F. (2002). <u>Video Assisted Observation of Visual Attention, Facial Expression</u> of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). <u>Video Assisted Observation of Visual Attention</u> and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.



Possible Treatment of Problems with Facial Expression and AD/HD

- Optimal dosing of a stimulant medication causes a significant reduction in visual attention loss.
- Facial expressions will become smooth and variable.
- Too high a dose can cause a return of the symptoms.
- Can properly ID 80% of the AD/HD children with video procedure.

Kuhle, H.J., Hoch, C., Rautzenberg, P. and Jansen, F. (2001). Short-Term Video-Based Observation of Behavior with Special Reference to Eye-Contact, Facial Expression and Motor Activity in Diagnosis and Therapy of Attention Deficiency/ Hyperactivity Syndrome (ADHS). (First Published in): <u>Praxis der Kinderpsychologie und Kinderpsychiatrie 50: 607-621.</u> Obtained from: Kuehle, H. (October 17, 2002). <u>Video Assisted Observation of Visual Attention and Motor</u> <u>Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children</u> with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami <u>Beach El</u>, Ph.D., P.L.C. All Rights Reserved







ARK Foundation's Learning Window

Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). <u>The Source for Visual-</u> <u>Spatial Disorders</u>. East Moline, IL: LinguiSystems, p. 176.

ARK Institute of Learning:

www.arkinst.org





Excellent Resource on NVLD/Social Communication Disorder (SCD) Treatment

 Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). <u>The Source for Visual-Spatial</u> <u>Disorders</u>. East Moline, IL: LinguiSystems.





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SCD/ASD Suggestions

 "Children with temporal and spatial problems need to be taught the language of time and space, syntax, the vocabulary of position as well as direction, map and clock reading."

Berg, M. & Stockdale, C. (2001). <u>The Language of Space and Time</u>. Paper presented at the 52nd International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – <u>www.conventionrecordings.com</u>; St. Petersburg, FL, Session S-168.



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SCD Treatment Plan for Social Skills (Website: 148)



- Verbal Mediation of Poor Visual-Spatial Abilities
- **1.** Describe pictures in detail verbally.
- 2. Teach the relationship between objects and pictures.
- **3.** Describe social interactions in movies.
- 4. Videotape child or adolescent in social situations and teach from that.

Rourke, B.P. (1995). <u>Syndrome of Nonverbal Learning Disabilities:</u> <u>Neurodevelopmental Manifestations</u>. New York, NY: Guilford.

Other Things to Consider When Working with ASD Children and Adolescents

One-Track Mind: Set shifting

- Fear of Making a Mistake
- Consistency and Certainty
- Special Interests & Talents
- Converting Thoughts to Speech: Texting instead of face to face
- Problems with Pragmatics, Syntax and Prosody

Other Things to Consider When Working with ASD Children and Adolescents

- Teaching Theory of Mind (ToM)
- Dealing with Sensory Sensitivity
- Between-Session Projects
 - Workbooks
- Selection of Group Participants
- Time with Parents After Every Session
- Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism Spectrum</u> <u>Disorders</u>. New York, NY: Guilford.

More On Flirting (Appendix 3)

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Attwood's (1998) story of the man with ASD in a singles bar.

Cordoni stated you need the same behaviors to get a job as you need to get a date.

Attwood, T. (1998). <u>Asperger's Syndrome: A Guide for Parents and</u> <u>Professionals</u>. Philadelphia, PA: Jessica Kingsley.

Cordoni, B. (1987). <u>Living With A Learning Disability</u>. Carbondale, IL: Southern Illinois University Press.

Social Issues Research Centre (SIRC) Guide to Flirting

"Flirting is a basic instinct, part of human nature. This is not surprising: if we did not initiate contact and express interest in members of the opposite sex, we would not progress to reproduction and the human species would become extinct. According to some evolutionary psychologists, flirting may even be the foundation of civilization as we know it. They argue that the large human brain – our superior intelligence, complex language, everything that distinguishes us from animals – is the equivalent to a peacock's tail: a courtship device evolved to attract and retain sexual partners. Our achievements in everything from art to rocket science may be merely a side-effect of the essential ability to charm." (Page 1 of 16)

Resource

Good Description of human flirting behavior.

Social Issues Research Centre (No date). <u>SIRC</u> <u>Guide to Flirting</u>,

http://www.sirc.org/publik/flirt.html,

pages 1 to 16.



How to Treat Flirting Difficulties

- Social Skills training by Mental Health Professionals and Speech-Language Pathologists
- Treat Neurosocial Comorbidities & lack of muscle tone
- Try an "Emotional Seeing Eye Dog" (Grandin, 1995)
- Address age appropriate dress and grooming.
- > Take care of complexion, etc.

SIRC Guide to Flirting

- Grandin, T. (1995). <u>Thinking in Pictures: And Other Reports From My Life with Autism</u>. New York, NY: Vintage.
- Grandin, T. (2006). Animals in Translation. New York, NY: Simon and Schuster.
- Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty and</u> <u>Beyond</u>. Arlington, TX: Future Horizons.
- Social Issues Research Centre (No date). <u>SIRC Guide to Flirting</u>, pages 1 to 16.<u>www.sirc.org/publik/flirt.html</u>.



Teaching Social Thinking (WEBSITE: 159-151)

Results indicated significant changes from pre to post measures on both verbal/nonverbal "expected" and "unexpected" behaviors, significant increases in the subcategories of expected verbal, listening/thinking with eyes and imitations with robust decreases in the subcategories of unexpected–verbal and unexpected nonverbal. Importance of social cognitive approaches for children with AS and HFA is discussed."

Crooke, P., Hendrix, R., and Rachman, J.Y. (2007).Brief Report: Measuring Effectiveness of Teaching Social Thinking to Children with Asperger's Syndrome (AS) and High Functioning Autism (HFA). <u>Journal of Autism and</u> <u>Developmental Disorders</u>, <u>38</u> (3), 581-591.

Social Competence Intervention Program (SCIP) (WEBSITE: 152)

"SCIP is an intervention that is multi-sensory in nature and targets underlying difficulties in social perception as well as providing exercises to improve the generating of strategies for problem solving." (p. 104)

Semrud-Clickman, M. (2007). <u>Social Competence in Children</u>. New York, NY: Springer, p. 104.
DIR/Floortime (WEBSITE: 153 -155)



- DIR: Developmental Individual Difference
- "...is a framework that helps clinicians, parents and educators conduct a comprehensive program tailored to the unique challenges and strengths of children with Autism Spectrum Disorders (ASD) and other developmental challenges."

Interdisciplinary Counsel on Developmental and Learning Disorders (ICDL) (8/11/2010). <u>What is dir/floortime?</u>

www.icdl.com/dirFloortime/overview/index.shtml/

Applied Behavior Analysis (WEBSITE: 156)



"Applied behavior analysis (ABA) is a discipline concerned with the application of behavioral science in real-world settings such as clinics or schools with the aim of addressing socially important issues such as behavior problems and learning...Features common to all ABA-based approaches are objective measurement of behavior, precise control of the environment and use of procedures based on scientifically established principals of behavior..."

Applied Behavior Analysis

"...Any clinical procedure or research investigation adhering to these basic criteria can be considered to be an ABA-based procedure. This includes 'functional behavioral assessment' and approaches such as 'Positive Behavioral Support' and forms of 'Behavior Therapy' that rely on direct observation of behavior and analysis of behavior environment relations."

Hagopian, L.P., and Boelter, E.W. (8/27/2010). <u>Applied Behavior Analysis and</u> <u>Neurodevelopmental Disorders: Overview and Summary of Scientific Support</u>. Kennedy Krieger Institute: <u>www.kennedykrieger.org/kki_misc.jsp?pid=4761</u>.

People Who Can Help with SCD/ASD

- American Speech-Language Hearing Association: <u>www.professional.asha.org</u>
- Behavioral

Neurologist/Neuro-Psychiatrists and/or Neuro-Ophthalmologist: <u>www.anpaonline.org</u> and

www.ama-assn.org

- Mental Health Professionals
- American Occupational Therapy Association: <u>www.atoa.org</u>



AD/HD, Inattentive **Presentation**, (Restrictive), DSM-5, "Crichton Syndrome", **"Concentration** Deficit **Disorder**"

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DSM-5 AD/HD as of May 1, 2012

- Attention-Deficit/Hyperactivity Disorder:
- Specify based on current presentation-
 - Combined Presentation
 - Predominately Inattentive Presentation
 - Predominately Hyperactive/Impulsive
 Presentation
 - Inattentive Presentation (Restrictive)
 - Other Specified Attention-Deficit Hyperactivity Disorder

DSM-5 AD/HD as of May 1, 2012

- Need to have symptoms prior to age 12
- 22 symptoms; Up from 18
- 9 symptoms Inattention: Need 6; May need only 4 over age 17
- 13 symptoms of Hyperactivity/Impulsivity: Need 6; May need only 4 over age 17
- Inattentive Presentation (Restrictive): Must meet Inattentive criteria and have no more than 2 Hyperactive/Impulsive Symptoms

Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type

 Brown believes the Inattentive Type has all the symptoms of the Combined Type except Hyperactivity-Impulsivity



Inattentive AD/HD (Continued)

Brown believes the following are the areas of difficulty in the Inattentive Type:

- **1. Difficulty organizing and activating for work**
- 2. Problems sustaining attention and concentration
- 3. Problems sustaining energy and effort



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Brown and Inattentive AD/HD (Continued)



4. Problems managing affective interference

5. Problems utilizing working memory and accessing recall

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in adults. In K.G. Nadeau (Ed.), <u>Attention-Deficit Disorder in Adults</u>. New York, NY: Bruner/Mazel, 93-108.

Inattentive AD/HD (Continued)

Brown (1995) continued the only difference between Inattentive AD/HD and Combined Type AD/HD was "ACTION". Those with Combined Type AD/HD have significant impairment with ACTION, which is being able to predict with reasonable accuracy how their personal actions could negatively effect others and how that could come back to haunt them in the future. They have time blindness. Those with Inattentive AD/HD do not have time blindness.

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in Adults. In K.G. Nadeau (Ed.), <u>Attention-Deficit Disorder in Adults</u>. New York, NY: Bruner/Mazel, 93-108.

Willcutt, Chhabildas and Pennington's Sluggish Cognitive Tempo Symptoms

- More problems with math achievement than Combined Type and 'Normals'.
- More Internalizing Problems than Combined Type/Few, if any Externalizing Problems
- Significant Processing Speed Problems

Willcutt, E.G., Chhabildas, N. and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. <u>ADHD Report</u>, <u>9</u> (1), pp. 2-5.

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Barkley's 2013 SCT Symptoms

Daydreaming excessively

- Trouble staying alert or awake in boring situations
- Easily confused
- Spacey or "in a fog"; Mind seems to be elsewhere
- Stares a lot

- Lethargic, more tired than others
- Underactive or have less energy than others
- Slow moving or sluggish
- Doesn't seem to understand or process information as quickly or accurately as others

Barkley's 2013 SCT Symptoms Continued

- Apathetic or withdrawn; less engaged in activities
- Gets lost in thought
- Slow to complete tasks; needs more time than others
- Lacks initiative to complete work or effort fades quickly
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.



Mild Combined Type vs. Inattentive Type/SCT

30% to 50% of those with Inattentive AD/HD have the Sluggish Cognitive Tempo (SCT) subtype. The remainder are Shadow Syndrome (Mild) Combined Type.

Barkley, R.A. (2002) <u>Mental and Medical Outcomes of AD/HD</u>. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.

Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford, p. 37.



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Medication and Inattentive AD/HD

- Only about 20% of those with Inattentive AD/HD respond to Stimulant Medication.
- Those with Sluggish Cognitive Tempo probably do not respond.
 - Barkley, R.A. (2002) <u>Mental and Medical Outcomes of AD/HD</u>. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.
 - Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford, p. 202.
 - Ramsay, R. (2010). <u>Nonmedication Treatments for Adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 15.

CHADD Conference November, 2012

Barkley (November 9, 2012) stated the ADHD and Disruptive Behavior Disorders Workgroup of the DSM-5 had decided in **October not to include Attention-Deficit/Hyperactivity Disorder, Inattentive** Presentation (Restrictive) in the manual's revision. He also mentioned the committee will probably not have adult norms and cutoffs for AD/HD...

CHADD Conference 2012

Barkley (November 9, 2012) continued that the DSM-5 committees had been told by a large group of health insurance companies, the Administration, the Department of Health and Human Services as well as the Social Security Administration not to add new disorders or do anything that would increase the prevalence of disorders. Hence, the decisions of the previous slide.

CHADD Conference, 2012

At the end of Barkley's SCT seminar there was a lively discussion about what to call SCT. Focused **Attention Disorder (FAD) was suggested. But** people did not like the acronym FAD, implying the disorder is a passing fad. Sluggish Cognitive **Tempo, Developmental Concentration Disorder, Atypical AD/HD, Pathological Mind Wandering** among others were considered, but none of these were thought to convey the true nature of the disorder and/or to be pejorative. Hence, they did not arrive at a name.

CHADD Conference, 2012

- Barkley, R. A. (November 9, 2012) The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.
- Author (May 1, 2012) Attention Deficit/Hyperactivity Disorder-Rationale: Rationale for Changes in ADHD in DSM-5 From the ADHD and Disruptive Behavior Disorders Workgroup. From website: <u>http://www.dsm5.org/ProposedRevision/Pages/prop</u>

osedrevision.aspx?rid=383#.

CHADD Conference, Martha Denckla, and Sluggish Cognitive Tempo

- During the question and answers portion of her keynote address I asked Dr. Denckla for her insights into SCT.
- She said she believes SCT exists and it is a form of extremely slow processing that is often found to be associated with AD/HD. These people have extremely slow response times. They are starting to perform electrophysiology studies of SCT because fMRI is too slow.
- Denckla, M.B. (November 10, 2012). Closing Keynote: Understanding the Neurobiological Basis of ADHD: 25 Years of Innovation in Research. Paper presented at the 24th Annual CHADD international Conference, Burlingame, CA; November 8-10, 2012.

The Two Dimensions of SCT

- Sluggishness/Lethargy
- Daydreaming
 - These are correlated to each other .40 to .50
- SCT is as common in males as in females
- Symptoms and severity are stable throughout life. Prevalence in children 4.7%; in adults 5.1%
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

SCT Age of Onset

The average age of onset for SCT is 8 to 10 years old. Two to 3 years older than those with AD/HD.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Processing Speed: SCT Vs ADHD

- The processing speed difficulties for those with SCT is related to slow response time and processing. They are prone to error on speeded tasks.
- The processing speed difficulties for those with AD/HD is related to variability in reaction time which is 3 times more than those without AD/HD.
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Executive Function and SCT

- Barkley (2012) found those with SCT have no problems with Executive Functions whereas those with AD/HD have it in all areas.
- The only area of impairment SCT children have that is more severe that those with AD/HD is in sports. AD/HD children are more impaired in all other areas.
- Those with ADHD and comorbid SCT are the most impaired overall.
- About 50% with AD/HD have comorbid SCT
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT)
 Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD
 International Conference on ADHD, Burlingame, CA, November 8 10, 2012.

Adults with SCT & Impairment

- Adults with SCT are more significantly impaired in the following areas than are those with AD/HD and the non-disabled:
 - Work
 - Education

– Sexual behavior

Barkley, R. A. (2011, May 23). Distinguishing Sluggish Cognitive Tempo From Attention-Deficit/Hyperactivity Disorder in Adults. <u>Journal of Abnormal</u> <u>Psychology</u>. Advance. online publication. doi: 10.1037/a0023961. Causes of SCT (Continued) (Website: 157)



SCT appears to be highly heritable.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Causes of SCT(Continued)

- SCT may be a form of hypoarousal almost like narcolepsy.
- It may be a dysfunction of the orientation-action attention network at the back of the brain.
- It may be related to an anxiety disorder. Anxiety Disorders are highly comorbid with SCT.

 Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Causes of SCT(Continued)

- SCT may be related to Pathological Mind Wandering. The following may be the cause of the mind wandering:
 - They cannot inhibit their mind from wandering.
 - They are trying to avoid boredom.
 - They are trying to avoid anxiety.
 - They have some obsessive component of Obsessive Compulsive Disorder.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT)
 Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD
 International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

New Treatments for SCT

"Behavioral psychosocial treatment, when specifically adapted for ADHD-I and coordinated among parents, teachers and children, appears efficacious in reducing symptoms and impairment associated with ADHD-I." (p. 1041)

Pfiffner, L.J., Mikami, A.Y., Huang-Polloock, C., Easterlin, B., Zalecki, C. and MCBurnett, K. (August, 2007). A Randomized Controlled Trial of Integrated Home-School Behavioral Treatment for ADHD, Predominately Inattentive Type. Journal of the American <u>Academy of Child and Adolescent Psychiatry</u>, <u>46</u>(8), 1041-1050. From website: <u>http://www.jaacap.com/article/S0890-8567(09)61554-9/abstract</u>.

Accommodating SCT in School

- Behavioral interventions that focus on noncompetitive external rewards for meeting specific goals.
- Extended time to address slow processing speed.
- Social skills training in groups without conduct disordered kids.
 SCT kids benefit from social training.
- About 60 % have comorbid LD. Treat comorbidities.
- Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder</u>. New York, NY: Guilford, p. 552.
- Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>.
- Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA, November 16.



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Accommodating SCT in School

SCT children experience significantly more anxiety than children with other types of AD/HD. They may respond better to behavioral treatments that focus on reducing their anxiety.

Ramsay, R. (2010). <u>Nonmedication Treatments for Adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 15.

SCT is <u>NOT</u> new!



Alexander Crichton may have written about what we call SCT in 1798!

- Crichton, A. (2008). An inquiry into the nature and origin of mental derangement: On attention and its diseases. Journal of Attention <u>Disorders</u>, 12, 200-204 (Original work published 1798).
- Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Crichton Syndrome

I wrote Barkley on Monday (November 12, 2012) and suggested the name, "Crichton Syndrome" for SCT. The name does not suggest the cause, because we currently do not know it, it gives Andrew Crichton credit for first observing it and it demonstrates how long we have known about it. In addition it is not pejorative and by using the word syndrome it indicates we don't know much about it, but it merits more study.

Crichton Syndrome Now Is Concentration Deficit Disorder (CDD)

- Barkley (November 13, 2012) responded he liked the name and would re-examine Crichton's work to make absolutely sure he merits credit for the "discovery."
- Barkley (November 2013) wrote an article to rename SCT Concentration Deficit Disorder (CDD)
- Barkley, R.A. (November, 2013). A plea to Rename Sluggish Cognitive Tempo (SCT) as Concentration Deficit Disorder. <u>The ADHD Report</u>, <u>21(7)</u>, 1-4.

New Articles on "CDD"

- Bauermeister, J.J., Barkley, R.A., Bauermeister, J.A., Martinez, J.V. and McBurnett (December 17, 2011-Published online). Validity of the Sluggish Cognitive Tempo, Inattention, and Hyperactivity Symptom Dimensions: Neuropsychological and Psychosocial Correlates. <u>Journal of Abnormal Child Psychology</u>, DOI 10.1007/s10802-011-9602-7.
- Barkley, R. A. (2011, May 23). Distinguishing Sluggish Cognitive Tempo From Attention-Deficit/Hyperactivity Disorder in Adults. <u>Journal of Abnormal</u> <u>Psychology.</u> Advance online publication. DOI: 10.1037/a0023961.
- Russell A. Barkley (October 24, 2012): Distinguishing Sluggish Cognitive Tempo From ADHD in Children and Adolescents: Executive Functioning, Impairment and Comorbidity, <u>Journal of Clinical Child & Adolescent</u> <u>Psychology</u>, DOI:10.1080/15374416.2012.734259.
- Barkley, R.A. (November, 2013). A Plea to Rename Sluggish Cognitive Tempo (SCT) as Concentration Deficit Disorder. <u>The ADHD Report</u>, <u>21</u>(7), 1-4.
Dr. Blake & Cross Country Education www.crosscountyeducation.com

- Other Seminars Dr. Blake does for Cross Country Education (6 CEUS, CDs available*, Video DVDs available):
 - Social Difficulties of Learning, Attentional and Autism Spectrum Disorders: Screening and Treatment-2013 Edition*
 - Neurosocial Disorders: Creating a Comprehensive Treatment Plan*
 - Assessment and Treatment of Dyslexia in Adolescents and Adults: No Adult Left Behind*
 - Building a Life Skills Tool Kit: Helping Prepare the Adolescent with Autism Spectrum Disorder for Adult Life
 - Life-changing Interventions for the New AD/HD: Beyond the DSM-5@

Dr. Blake & Cross Country Education www.crosscountyeducation.com

- Webinars Dr. Blake does for Cross Country Education (1 CEU available):
 - Understanding Inattentive ADHD: Evidence-Based Screening and Treatment Strategies (Recently Updated!)
 - Everyone is a Stranger: Face Blindness in Children with Autism Spectrum Disorders
 - "No! I Don't Want to Give My Child a Drug to Treat Their ADHD": Complementary and Alternative Treatments for ADHD

Kevin Z. Blake, Ph.D., P.L.C.

- Dr. Blake's personal story seminar:
 - I Pulled an All-Nighter for My High School Graduation and Other Adventures of a Dyslexic, Hearing Impaired Psychologist
- Secondary & Post Secondary Education and Employer Consultation
- Program Development
- Staff Training & Conference Presentations-Learning Disorders, Dyslexia, AD/HD, Autism Spectrum Disorders; Children, Adolescents & Adults
 - 520-327-7002
 - <u>www.drkevintblake.com</u>

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Social Skills & Dyslexia

- Blake, K.T. (Fall, 2004). Improving the dyslexic child's social skills by attending to their neurobiological differences. <u>Perspectives</u>, <u>30</u> (4), 6-9.
- Available from: International Dyslexia Association website: <u>www.interdys.org</u>



ARK Foundation's Learning Window & SCD/ASD

ARK Institute of Learning:

<u>www.arkinst.org</u>





Excellent Resource on SCD/NVLD Treatment

Neff, B., Neff-Lippman, J., and Stockdale, C. (2002). <u>The Source for Visual-Spatial</u> <u>Disorders</u>. East Moline, IL: LinguiSystems, p. 176.)



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Social Competence Intervention Program

• The SOCIAL COMPETENCE INTERVENTION PROGRAM (SCIP), "...is a multisensory intervention addressing perceptual deficits that is combined with a meta-cognition component to assist with generalization to classroom and play settings. It involves retraining children in the fundamentals of social perception." (p. 21)

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



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Social Competence Intervention Program

Guli, L.A., Wilkinson, A.D., and Semrud-Clikeman, M. (2006). <u>Social Competence</u> <u>Intervention Program (SCIP): A Drama-Based</u> <u>Intervention for Youth on the Autism</u> <u>Spectrum</u>. Champaign, IL: Research Press.



Treatment of Social Anxiety/ Shyness



- Henderson, L. (2011). <u>Improving Social</u> <u>Confidence and Reducing Shyness Using</u> <u>Compassion Focused Therapy</u>. Oakland, CA: New Harbinger.
- Henderson, L. (2009). Social Fitness Training Manual: A Cognitive-Behavioral Approach to Treating Shyness and Social Anxiety Disorder. Berkley, CA: The Shyness Institute.

Great Resource For ASD and General Social Skills

McAfee, J. (2002). <u>Navigating the Social World: A</u> <u>Curriculum for Individuals with Asperger's</u> <u>Syndrome and Related Disorders</u>. Arlington, TX: Future Horizons.



Great Resource for Adult AD/HD & Social Skills

- Novotni, M. (1999). What Does Everyone Else Know That I Don't. Plantation, FL: Specialty Press.
- > ADDWAREHOUSE: <u>www.addwarehouse.com</u>.



Social Skills Intervention Programs



Father Flanagan's Girls and Boys Town has done 40 years of social skills training research with many different child and adolescent populations. Numerous books are available at Boy's Town Press:

- www.boystownpress.org
- <u>www.girlsandboystown.org</u>

Dowd, T. and Tierney, J. (1992). <u>Teaching Social Skills to</u> <u>Youth</u>. Boys Town, NE: The Boys Town Press.

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ASD Social Skills Intervention Programs



Carol Gray's – Social Stories Unlimited- Future Horizons: http://www.futurehorizons-autism.com/

Gray, C.A. (1998). Social Stories and Comic Strip Conversations With Students With Asperger's Syndrome and High-Functioning Autism. In E. Schopler, G. B. Mesibov, & L. Kunce (Eds.), <u>Asperger's</u> <u>Syndrome or High-Functioning Autism</u>. New York, NY: Plenum.

Good Resource About ASD:



- Attwood, T. (1998). <u>Asperger's Syndrome: A</u> <u>Guide for Parents and Professionals</u>. Bristol, PA: Jessica Kingsley.
- > Attwood, T. (2007). <u>The Complete Guide to</u> <u>Asperger's Syndrome</u>. Philadelphia, PA.
- Scarpa, A., White, S.W., and Attwood, T. (2013) <u>CBT for Children and Adolescents with High-</u> <u>Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

Other Good Books on ASD



- Durand, V.M. (2014). <u>Autism Spectrum Disorder:</u> <u>A Clinical Guide for General Practitioners</u>. Washington, DC: American Psychological Association.
- Goldstein, S., Naglieri, J.A. and Ozonoff, S. (2008). <u>Assessment of Autism Spectrum</u> <u>Disorders</u>. New York, NY: Guilford.
- Klin, A., Volkmar, F.R. and Sparrow, S.S. (2000).
 <u>Asperger Syndrome</u>. New York, NY: Guilford.

Books On ASD by Dr. Temple Grandin

- Grandin, T. (2013). <u>The Autistic Brain: Thinking</u> <u>Across the Spectrum</u>. New York, NY: Houghton Mifflin Hardcourt.
- Grandin, T (2011). <u>The Way I See It: A Personal</u> <u>Look at Autism and Asperger's, Second Edition</u>. Arlington, TX: Future Horizons.
- Grandin, T. (2012). <u>Different...Not Less</u>. Arlington, TX: Future Horizons.
- Grandin, T. (1995). <u>Thinking In Pictures and</u> <u>Other Reports From My Life With Autism</u>. New York, NY: Vintage.

Great Books on Nonverbal Autism

- Mukhopadhyay, T.R. (2011). <u>The Mind Tree: A</u> <u>Miraculous Child Breaks The Silence of</u> <u>Autism</u>. New York, NY: Arcade.
- Mukhopadhyay, T.R. (2011). How Can I Talk If <u>My Lips Don't Move? Inside My Autistic</u> <u>Mind</u>. New York, NY: Arcade.

Good Publisher of Autism Spectrum Books



Future Horizons: www.fhautism.com

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Good Resource About ASD:

Ozonoff, S., Dawson, G. and McPartland, J. (2002). <u>A Parent's Guide To Asperger</u> <u>Syndrome & High Functioning Autism</u>. New

York, NY: Guilford.



Good Resource On SCD:

Thompson, S. (1997). <u>The Source for</u> <u>Nonverbal Learning Disorders</u>. East Moline,

IL: LinguiSystems.



Good Websites on SCD

> NLD on the Web:

www.nldontheweb.org

Byron Rourke's Website:
www.nld-bprourke.ca



Good Resource On Dyssemia & Nonverbal Social Skills

Nowicki, S. and Duke, M. (2002). <u>Will I Ever</u> <u>Fit In?</u> New York, NY: Free Press.



Good General Resource on Adults with SLD &/or AD/HD

Roffman, A.J. (2000). <u>Meeting the Challenge</u> <u>Of Learning Disabilities in Adulthood</u>. Baltimore, MD: Brookes.



A Good Book That Summarizes Recent Research on Specific Learning Disorder with Impairment in Reading/Dyslexia

Fletcher, J.M., Lyon, G.R., Fuchs, L.S. and Barnes, M.A. (2007). **Learning Disabilities: From Identification** to Intervention. **New York, NY:** Guilford.



Good Resource on The Brain Science of Reading

Dehaene, S. (2009). <u>Reading In The Brain: The New Science of How We Read</u>. New York, NY: Penguin.



A Good Book That Summarizes Recent **Research Into Specific Learning Disorder-Dyscalculia** Berch, D. and Mazzocco, M.M.M (2007). Why is Math So Hard for Some Children? The Nature and Origins of Mathematical Learning **Difficulties and Disabilities. New York, NY:** Guilford.



Good Resource On The Brain Science of Mathematics

Dehaene, S. (2011). <u>The Number Sense: How</u> <u>The Mind Creates Mathematics</u>. New York, NY: Oxford University Press.



Good General Book on Classroom Techniques for SLD &/or AD/HD Children

Mather, N. and Goldstein, S. (2001). Learning <u>Disabilities and Challenging Behaviors: A</u> <u>Guide to Intervention and Classroom</u> <u>Instruction</u>. Baltimore, MD. Brooks.



Good General Book On Classroom Interventions With SLD-Dyslexia

Richards, R. (1999). <u>The Source for Dyslexia</u> <u>and Dysgraphia</u>. Moline, IL: LinguiSystems.



Great Research Books on AD/HD

- Barkley, R.A. (2006). <u>Attention-Deficit</u> <u>Hyperactivity Disorder, Third Edition</u>. New York, NY: Guilford.
- Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). <u>ADHD In Adults: What The Science Says</u>. New York, NY: Guilford.
- Brown, T.E. (2013). <u>A New Understanding of</u> <u>ADHD in Children and Adults: Executive Function</u> <u>Impairments</u>. New York, NY: Routledge.

Excellent Book for Those Working With AD/HD Children

Barkley, R. A. (2005) <u>Taking Charge of ADHD:</u> <u>The Complete Authoritative Guide for</u> <u>Parents (3rd edition)</u>. New York: Guilford.



Excellent Book for Those Working with AD/HD Adults

Barkley, R.A. (2010). <u>Taking Charge of Adult</u> <u>ADHD</u>. New York, NY: Guilford.



More Books on ADHD

Barkley, R.A. (2011). <u>Executive Functioning in</u> <u>Daily Life Activities: Theory, Integration and</u> <u>Clinical Implications</u>. New York, NY: Guilford.



Good Books On How to Work With AD/HD People

Author (2005). <u>The New CHADD Information</u> <u>and Resource Guide for AD/HD</u>. Landover, MD: CHADD.

- Author (2006). <u>CHADD Educator's Manual</u>. Landover, MD: CHADD.
- Available from: www.chadd.org



Great Book On How To Teach AD/HD Children

Zentall, S. (2006). <u>ADHD and Education:</u> <u>Foundations, Characteristics, Methods and</u> <u>Collaborations</u>. New York, NY: Merrill.


Good Book on Accommodations for SLD &/or AD/HD Students

Mather, N., and Jaffe, L. (2002). <u>Woodcock</u> Johnson III: Reports, Recommendations and <u>Strategies</u>. New York, NY: John Wiley.



Good Resources on Memory

- Klingberg, T. (2013). <u>The Learning Brain:</u> <u>memory and Brain Development</u>. New York, NY: Oxford University Press.
- Klingberg, T. (2009). <u>The Overflowing Brain:</u> <u>Information Overload and the Limits of</u> <u>Working Memory</u>. New York, NY: Oxford University Press.

Good Book on Treating Memory Problems

Dornbush, M.P. and Pruitt, S.K. (2009). <u>Tigers,</u> <u>Too: Executive Functions/Speed of</u> <u>Processing/Memory-Impact on Academic,</u> <u>Behavioral and Social Functioning of Students</u> <u>with ADHD, Tourette Syndrome and OCD:</u> <u>Modifications and Interventions</u>. Atlanta, GA: Parkaire.



Classic Book On Social Skills With SLD Children

Sommer Solution Series Seri



Good Resource On Prosopagnosia

Bate, S. (2013). Face recognition & Its Disorders. New York, NY: Palgrave Macmillan.



Helpful Organizations

- Learning Disabilities Association (LDA):
 <u>www.lda.org</u>
- International Dyslexia Association (IDA): <u>www.interdys.org</u>
- Children and Adults with Attention Deficit Disorders (CHADD): <u>www.chadd.org</u>
- National Attention Deficit Disorder Association (ADDA): <u>www.add.org</u>

Helpful Organizations

- Nonverbal Learning Disabilities Association (NLDA): <u>www.nlda@nlda.org</u>
- MAAP Services for Autism and Asperger's Disorder: <u>www.maapservices.org</u>
- ADD WareHouse: <u>www.addwarehouse.com</u>
 LinguiSystems: <u>www.linguisystems.com</u>

HELPFUL BOOKS ON SLD-DYSLEXIA FOR PROFESSIONALS AND LOVED ONES

- Mather, N. and Goldstein, S. (2001). <u>Learning Disabilities and</u> <u>Challenging Behaviors</u>. Baltimore, MD: Brookes.
- Reid, G. & Fawcett, A. (2004). <u>Dyslexia in Context</u>. Philadelphia, PA: Whurr.
- Nosek, K. (1997). <u>Dyslexia in Adults</u>. Dallas, TX: Taylor.
- Bartlett, D. & Moody, S. (2000). <u>Dyslexia in the Workplace</u>. Philadelphia, PA: Whurr.
- Goldstein, S. (1997). <u>Managing Attention and Learning</u> <u>Disorders in Late Adolescence & Adulthood</u>. New York, NY: John Wiley & Sons.

Silver, L.B. (2006). <u>The Misunderstood Child</u>, <u>4th Edition</u>. New York, NY: Crown.



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HELPFUL BOOKS ON SLD-DYSLEXIA FOR PROFESSIONALS AND LOVED ONES

Fichards, R.G. (1999). <u>The Source for</u> <u>Dyslexia and Dysgraphia</u>. East Moline, IL: LinguiSystems.

Roffman, A.L. (2000). <u>Meeting the Challenge</u> of Learning Disabilities in Adulthood. Baltimore, MD: Brookes.

Wren, C. & Einhorn, J. (2000). <u>Hanging by a Twig:</u> <u>Understanding and Counseling Adults with Learning</u> <u>Disabilities</u>. New York, NY: Norton.

Rodis, P., Garrod, A., & Boscardin, M.L. (2001). <u>Learning Disabilities & Life</u> <u>Stories</u>. Boston, MA: Allyn and Bacon.

Shaywitz, S. (2003). <u>Overcoming Dyslexia</u>. New York, NY: Knopf.

> *BOOKS IN THIS FONT ARE GOOD FOR THE LAYPERSON

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AD/HD Books for Parents

- Barkley, R. A., Benton, C., and Robin, A.R. (2008). <u>Your Defiant Teen</u>. New York, NY: Guilford.
- Silver, L.B. (2006). <u>The Misunderstood Child</u>, <u>4th Edition</u>. New York, NY: Crown.
- Tridas, E.Q. (2007). From ABC to ADHD: What Parents Should Know About Dyslexia and Attention Problems. Baltimore, MD: International Dyslexia Association.

People Who Can Help with SCD/ASD

- American Speech-Language Hearing Association: <u>www.professional.asha.org</u>
- Behavioral



- Neurologist/Neuropsychiatrists and/or Neuro-Ophthamologist: <u>www.anpaonline.org</u> and <u>www.ama-assn.org</u>
- Mental Health Professionals
- American Occupational Therapy Association: <u>www.atoa.org</u>

Helpful Websites SCD and ASD

- www.nldontheweb.org
- Nonverbal Learning Disability Association: <u>www.nlda.org</u>
- LD Online: www.ldonline.org
- MAAP Services for Autism and Asperger's Disorder: <u>www.maapservices.org</u>
- UC Davis M.I.N.D. Institute: <u>www.ucdmc.ucdavis.edu/MINDInstitute</u>

Yale Child Study Center: <u>www.med.yale.edu/chldstdy/autism/aspergers.htm</u> <u>l</u>

Helpful Books SCD and ASD

- Ozonoff, S., Dawson, G. and McPartland, J. (2002). <u>A Parent's</u> <u>Guide to Asperger Syndrome & High Functioning Autism</u>. New York, NY: Guilford.
- Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). <u>The Source for</u> <u>Visual-Spatial Disorders</u>. East Moline, IL: LinguiSystems.
- Attwood, T. (1998). <u>Asperger Syndrome: A Guide for Parents and</u> <u>Professionals</u>. Philadelphia, PA: Jessica Kingsley.
- Thompson, S. (1997). <u>The Source for Nonverbal Learning</u> <u>Disorders</u>. East Moline, IL: LinguiSystems.
- Kowalski, T.P. (2002). <u>The Source for Asperger's Syndrome</u>. East Moline, IL: LinguiSystems.

Kowalski, T.P. (2010). <u>Social Pragmatic Success: For Asperger's</u> <u>Syndrome and Other Related Disorders</u>. Orlando, FL:

Professional Communication Services, Inc. Kevin T. Blake, Ph.D., P.L.C.

Good Book on Transitioning



Ford, A. (2007). <u>On Their Own: Creating an</u> <u>Independent Future for Your Child with</u> <u>Learning Disabilities and ADHD</u>. New York, NY: Newmarket Press.

Transition Programs

- Landmark College (Putney, VT): <u>www.landmarkcollege.org/</u>
- Chapel Haven West: (CHWEST) is a Transitional Residential Program serving adults in the Autism Spectrum and those with mild Developmental Disabilities located in Tucson, Arizona.

http://www.iser.com/chapelhaven-CT.html

- Life Development Institute (Phoenix, AZ): <u>http://www.lifedevelopmentinstitute.org/</u>
- Brehm OPTIONS Program (Carbondale, IL): http://www.options.brehm.org/

There are other programs across the country.

Using CBT with AD/HD and/or ASD Individuals (Appendix 1)

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What is CBT?

- "Cognitive-behavioral therapy (CBT) is an approach that merges behavior therapy with cognitive therapy, using short-term, problemfocused cognitive and behavioral strategies based on empirical data and theory from learning and cognition" (p. 3).
- Scarpa, A., and Lorenzi, J. (2013). Cognitive-Behavioral Therapy with Children and Adolescents, In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT with Children

"While this approach historically was developed for and is traditionally used to treat adults, there is a general consensus that CBT approaches have empirical support for treating psychological disorders of childhood; however, a simple downward extension from adults to children is insufficient; that is, CBT approaches for children must consider developmental issues" (p. 3).

Scarpa, A., and Lorenzi, J. (2013). Cognitive-Behavioral Therapy with Children and Adolescents, In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for</u> <u>Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT with Children

"...the CBT approach can be modified, for example, to include parents or other key caregivers in the treatment process, to incorporate concrete and tangible examples, to use methods that match the child's cognitive abilities, and to incorporate lessons into developmentally appropriate routines" (p. 13).

Scarpa, A., and Lorenzi, J. (2013). Cognitive-Behavioral Therapy with Children and Adolescents, In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT with AD/HD in Children

"In sum, self-monitoring and self-reinforcement strategies are the most promising of the self management interventions, although the effects of these interventions for changing behavioral problems are not as strong, as durable, or as generalizable as was once expected and are not superior to those of traditional behavioral programs..." There are, "...much stronger effects for contingency management and academic interventions that problem solving-training or other forms of CBT" (p. 574).

Pfiffner, L.J., Barkley, R.A., and DuPaul, G.J. (2006). Treatment of ADHD in School Settings. In R.A. Barkley (ed.), <u>Attention – Deficit hyperactivity Disorder: A Handbook for Diagnosis and</u> <u>Treatment</u>. New York, NY: Guilford.

CBT and AD/HD in Children

"...others ended the decade with a challenge to those who persisted in their support for the CBT approach to provide efficacy. Such evidence would not be forthcoming. Later, even the conceptual basis for the treatment came under attack as being inconsistent with Vygotsky's theory of the internalization of language" (p. 28).

Barkley, R.A. (2006). History. In R.A. Barkley (ed.), <u>Attention – Deficit hyperactivity</u> <u>Disorder: A Handbook for Diagnosis and Treatment</u>. New York, NY: Guilford.

CBT & ASD with Comorbid AD/HD in Children

"If present, these attentional characteristics obviously affect the content and duration of many of the components of a CBT program. If the child or adolescent shows impulsivity or hyperactivity, these characteristics would also need to be accommodated and can require that the clinician provides more vigilant supervision, especially if the CBT is being conducted in a group format..."

CBT & ASD with Comorbid AD/HD in Children

"...For example, the clinician may use within the session a token economy whereby the client can earn tokens ...for following rules and completing activities. Also, stimulant medication is widely used, and often (though not always) is effective in the management of ADHD symptoms...Therefore, if stimulant medication is helpful for the client being seen, clinical experience has indicated the administration of medication prior to the CBT session can facilitate concentration and cooperation" (p. 31).

Attwood, T, and Scarpa, A. (2013). Modifications of Cognitive-Behavioral Therapy for Children and Adolescents with High-Functioning ASD and their Common Difficulties. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning</u> <u>Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT & ASD

KICK Plan

- **G**K = Knowing I'm nervous
- □I = Icky thoughts
- **C** = Calm thoughts

□K = Keep practicing

Green, S.A., and Wood, J.J. (2013). Cognitive-Behavioral Therapy for Anxiety Disorders in Youth with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT</u> <u>for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT & ASD

- **Psychoeducation & include visual aids**
- **Rewards System**
- **Developing a hierarchy/exposure modules**
- □ Parent coaching
- **Playdates**
- □Social coaching
- Mentoring
- **School involvement**

Adaptive skills & Stereotyped interest modules

Green, S.A., and Wood, J.J. (2013). Cognitive-Behavioral Therapy for Anxiety Disorders in Youth with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT & ASD

"Thus, CBT, when adapted for the special needs of youth with ASD, is potentially effective at decreasing anxiety in this population, but more replication is necessary to establish the efficacy of these programs" (p. 91).

Green, S.A., and Wood, J.J. (2013). Cognitive-Behavioral Therapy for Anxiety Disorders in Youth with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT</u> <u>for Children and Adolescents with High-Functioning Autism Spectrum Disorders</u>. New York, NY: Guilford.

CBT for Young ASD Children

- **S** = Stress
- **A** = (and) Anger
- **D**M = Management
- Program

First Stage: Affective Education

Second Stage: Cognitive Restructuring

Scapra, A., Reyes, N, and Attwood, T. (2013). Cognitive-Behavioral Therapy for Stress and Anger Management in Young Children with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and Adolescents with High-Functioning Autism</u> <u>Spectrum Disorders</u>. New York, NY: Guilford.

Relaxation Tools

- Take a break
- Sit by self
- Talk to someone
- Stretch
- Deep breaths
- Exercise
- Sports
- "Creative Destruction"

Taking out the trash

Music

Drawing

- Solitude Massage
- Reading
- Repetitive Action

> Sleep

Scapra, A., Reyes, N, and Attwood, T. (2013). Cognitive-Behavioral Therapy for Stress and Anger Management in Young Children with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), <u>CBT for Children and</u> <u>Adolescents with High-Functioning Autism</u> <u>Spectrum Disorders</u>. New York, NY: Guilford.

Dogs & Social Interaction (Appendix 2)

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Emotional Seeing Eye Dogs

- Dogs separated from wolves about 135,000 years ago.
- Dogs lived with humans 100,000 years ago; even before we were "modern humans" (Homo Habilis).
- Dog and humans co-evolved.
- Humans learned to think and act like dogs.
- Dogs allowed humans to hunt big game while they acted as guards and lookouts. Humans did more planning and organization activities.
- 14,000 years ago humans domesticated dogs.
- Homo Sapien Neantathalensis did not have dogs; they are extinct.
- In the past 100,000 years dogs brains shrunk by 10 to 30%; mostly in their forebrains. Humans' brains shrank by 10%; mostly in the midbrain, sensory and smell areas.
- Dogs have a symbiotic relationship with humans and have a genetic predisposition to understand human emotions.

Grandin, T. (2005). <u>Animals in Translation</u>. New York, NY: Simon & Schuster.

Therapy Dogs and ASD

"When the therapy dog was present, the children (with ASD, sic.) were significantly more focused, more playful, and more aware of interactions than either of the other conditions (stuffed dog, or ball present)" (p. 185).

Johnson, R.A. (2011). Animal-Assisted Interventions In Health Care Contexts. In P. McCardle, McCune, S., J.A. Griffin and Maholmes, (Eds.), <u>How Animal Affect Us:</u> <u>Examining The Influence of Human-Anial Interaction on Child Development and</u> <u>Human Health</u>. Washington, DC: American Psychological Association.

Temple Grandin, Ph.D. Says...

"Unlike other autism interventions that can be more easily started and stopped embarking on the journey to find a service dog for a child is a long-term commitment on the part of the entire family. A service dog is much more than a well trained pet".

Companion dog; Therapy dog; Safety dog

Grandin, T. (2011). <u>The Way I See It: A personal Look at Autism & Aspergers, Second</u> <u>Edition</u>. Arlington, TX Future Horizons.

Dog and Children with AD/HD

Dr. Sabrina Schuck, a University of California Irvine scientist is studying wheather interacting and being in the presence of dogs can have a therapeutic effect on children with AD/HD. She states she has come across significant anecdotal evidence they can.

Bold, K. (2012). <u>Different Breed of Therapist</u>. Irvine, CA: University of California Irvine. From website: <u>http://www.uci.edu/features/2012/02/feature_dogtherapy_120213.php</u>.

Therapy Dogs and AD/HD

"Objective: The objective of this study was to provide preliminary findings from an ongoing randomized clinical trial using a canine-assisted intervention (CAI) for 24 children with ADHD. **Method: Project Positive Assertive Cooperative** Kids (P.A.C.K.) was designed to study a 12-week cognitive-behavioral intervention delivered with or without CAI. Children were randomly assigned to group therapy with or without CAI. Parents of children in both groups simultaneously participated in weekly parent group therapy sessions..."

Therapy Dogs and AD/HD

"... Results: Across both treatment groups, parents reported improvements in children's social skills, prosocial behaviors, and problematic behaviors. In both groups, the severity of ADHD symptoms declined during the course of treatment; however, children who received the CAI model exhibited greater reductions in the severity of ADHD symptoms than did children who received cognitive-behavioral therapy without CAI. Conclusion: Results suggest that CAI offers a novel therapeutic strategy that may enhance cognitive-behavioral interventions for children with ADHD.

Schuck, S.E.B., et al. (September 23, 2013). Canine-Assisted Therapy for Children With ADHD: Preliminary Findings From The Positive Assertive Cooperative Kids Study. <u>Journal of</u> <u>Attention Disorders</u>, doi: 10.1177/1087054713502080.

Emotional Seeing Eye Dogs (WEBSITE: 105-111)



- 4Paws For Ability
 - **253 Dayton Avenue**

Xenia, OH 45385

- Training Center: 937-374-0385
- Website:

www.4pawsforability.org

Dogs may have a rudimentary mirror neuron system!

Blakeslee, S. (January 10, 2006). Cells That Read Minds. New York Times; From website: <u>www.nytimes.com/2006/01/10/science/10mirr.html?pagewanted=1&_r=1</u>.
Service and Therapy Dog Organizations

- International Association of Service Dog Partners: <u>www.iaadp.org</u>
- Autism Service Dogs of America: <u>www.autismservicedogsofamerica.com</u>
- Wilderwood Service Dogs for Autism: <u>www.wilerwood.org</u>
- Northstar Foundation/Service Dogs for Autism: <u>www.northstardogs.com/autism.shtml</u>
- Pet Partners (formerly Delta Society): <u>www.petpartners.org</u>

More On Flirting (Appendix 3)

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The "Resting Face"



- 75% of the population has an emotionally neutral face.
- 25% of the population have a resting face that is interpreted negatively.
- The older you are the more at risk you are for this.
- This can cause a very negative first impression.
- Some people resort to surgery to "correct" this (Bell's Palsy, etc.).

Nowicki, S. and Duke, M. (2002). Will I Ever Fit In? New York, NY: Free Press.

Golden Ratio

"...We found that although different faces have varying attractiveness, individual attractiveness is optimized when the face's vertical distance between the eyes and mouth is approximately 36% of its length and the horizontal distance between the eyes is approximately 46% of the face's width..." (p. 149)

Pallett, P.M., Link, S., and Lee, K. (January 2010). New "Golden Ratios for Beauty. <u>Vision Research</u>, <u>50</u> (2), pp. 149-154.

Facial Symmetry and "Beauty"

"Two prominently studied traits are symmetry and sexual dimorphism, which, for many animals, are proposed cues to heritable fitness benefits. These traits are associated with other potential benefits, such as fertility. In humans, the face has been extensively studied in terms of attractiveness. Faces have the potential to be advertisements of mate quality and both symmetry and sexual dimorphism have been linked to the attractiveness of human face shape."

Little, A., Jones, B.C., Waitt, C., Tiddeman, B.P., Fienberg, D.R., Perrett, D.I., Apicella, C.L., and Marlowe, F.W. (July 9, 2008). Symmetry Is Related to Sexual Dimorphism in Faces: Data Across Culture and Species, <u>PLoS One,3</u> (5): e2106.



 "...a flirting plan is wired into us, and that it has been embedded in our genes and in our brain's operating system the same way and for the same reasons that every other sexual trait has been - by trial and error, with conservation of what works best." (Rodgers, 1999, p. 38)

Rodgers, J.E. (February, 1999). Fascinating Flirting. <u>Psychology Today</u>, <u>32</u> (1), 36-41, 64-65, 67, 69-70

 "Enter creativity, humor and intelligence. Deployed in flirting they disclose more about an individual person than all the antlers do about leaching animals...They act as an honest signal that we've got a reasonably well put together nervous system." (p. 70)

Rodgers, J.E. (February, 1999). Fascinating Flirting. <u>Psychology Today</u>, <u>32</u> (1), 36-41, 64-65, 67, 69-70.



 "The moment of attraction, in fact, mimics a kind of brain damage...In attraction, we don't stop and think, we react, operating on a 'gut' feeling, with butterflies, giddiness, sweaty palms and flushed faces brought on by the reactivity of the emotional brain. We suspend intellect at least long enough to propel us to the next step in the mating gameflirtation." (p.5)

Ellison-Rogers, J. (January/February, 1999). Flirtation Fascination. <u>Psychology Today</u>, (Document ID: 575), From website: <u>www.psychologytoday.com/articles/index.php?term+pto19990101-000033&print=1</u>.



 It takes about seven seconds to form a first opinion about another person. Most of this is done nonverbally.

Nowicki, S. and Duke, M. (2002). Will I Ever Fit In? New York, NY: Free Press.

• Mating and relationships would be almost impossible without facial expressions.

Gladwell, M. (August 5, 2002). The Naked Face (Interview of Paul Ekman). <u>The New Yorker</u>, pp. 36-49.



- Attwood's (1998) story of the man with Asperger's Disorder in a singles bar.
- Cordoni stated you need the same behaviors to get a job as you need to get a date.
- Attwood, T. (1998). <u>Asperger's Syndrome: A Guide for Parents and</u> <u>Professionals</u>. Philadelphia, PA: Jessica Kingsley.
- Cordoni, B. (1987). <u>Living With A Learning Disability</u>. Carbondale, IL: Southern Illinois University Press.

"Over the course of our evolution as a species, our brains have learned how to spot the healthiest mates, those who are likely to give us children, and those whose resources and commitment can help our offspring survive." (p. 60)



Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Chimps and Polio



"Finally, there are the rarely observed instances of shunning a group member whose behavior seems abnormal – the social rejection of Pepe and Old Mr. McGregor after they suffered polio." (P. 227)

Goodall, J. (1986). Social Rejection, Exclusion and Shunning Among Gombe Chimpanzees. <u>Ethnology and Sociobiology</u>, <u>7</u>, pp. 227-239. From Website: <u>http://www.bepress.com/context/gruterclassics/article/1032/viewcontent/</u>.

How to Treat Flirting Difficulties

- Social Skills training by Mental Health Professionals and Speech-Language Pathologists
- Treat Neurosocial Comorbidities & lack of muscle tone
- > Try an "Emotional Seeing Eye Dog" (Grandin, 1995)
- Address age appropriate dress and grooming.
- > Take care of complexion, etc.

SIRC Guide to Flirting

- Grandin, T. (1995). <u>Thinking in Pictures: And Other Reports From My Life with Autism</u>. New York, NY: Vintage.
- Grandin, T. (2006). Animals in Translation. New York, NY: Simon and Schuster.
- Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty and</u> <u>Beyond</u>. Arlington, TX: Future Horizons.
- Social Issues Research Centre (No date). <u>SIRC Guide to Flirting</u>, pages 1 to 16.<u>www.sirc.org/publik/flirt.html</u>.





Nice Description of Human Flirting

- Brooks, D. (January 11, 2011). Social Animal: How The New Sciences of Human Nature Can Help Make Sense of a Life. New Yorker.
- <u>http://newyorker.com/reporting/2011/01/17/</u> <u>110117fa_fact_brooks?printable=true</u>.

Social Issues Research Centre (SIRC) Guide to Flirting

"Flirting is a basic instinct, part of human nature. This is not surprising: if we did not initiate contact and express interest in members of the opposite sex, we would not progress to reproduction and the human species would become extinct. According to some evolutionary psychologists, flirting may even be the foundation of civilization as we know it. They argue that the large human brain – our superior intelligence, complex language, everything that distinguishes us from animals – is the equivalent to a peacock's tail: a courtship device evolved to attract and retain sexual partners. Our achievements in everything from art to rocket science may be merely a side-effect of the essential ability to charm." (Page 1 of 16)

Human Flirting Behavior

- 55% of first impressions come through appearance and body language.
- 38% comes from your style of speaking, not the content of what you say.
- 7% comes from the words you say

Social Issues Research Centre (No date). <u>SIRC Guide to Flirting</u>, <u>http://www.sirc.org/publik/flirt.html</u>,



pages 1 to 16.

WHAT DOES THIS MEAN?



- Work on appearance and body language first
 - Age appropriate and stylish clothing and hair
 - Good hygiene and grooming
 - Cleaning up complexion (dermatologist, etc.)
 - Work on muscle tone (OT/PT/Personal Trainer, etc.)
 - Work on Body Language (Mental Health Professional and Speech-Language Pathologist)

Digression: ASD and Appearance



- Those with Asperger's Disorder and High Functioning Autism have problems with Theory of Mind which can cause problems with receptive interpretation of non-verbal cues from others. It can also cause them problems in putting importance on their own non-verbal cues.
- Klin, A., Volkmar, F.R. and Sparrow, S.S. (2000). <u>Asperger Syndrome</u>. New York, NY: Guilford.

WHAT DOES THIS MEAN? (CONT.)

 Work on speech second (Speech-Language Pathologist): "Aim for moderation in volume and tone, with enough variation in pitch and pace to hold your companion's interest. Also remember that a rising or falling intonation, especially when accompanied by a drop in volume, is a 'turn-yielding cue', whereby speakers signal that they have finished what they are saying and are ready to listen to the other person. When you hear these vocal signals, your companion is probably indicating that it is your turn to speak. When your companion hears these signals, he or she may well assume that you are 'yielding' the floor."

Social Issues Research Centre (No date). <u>SIRC Guide to Flirting</u>, <u>http://www.sirc.org/publik/flirt.html</u>,

pages 1 to 16.

WHAT DOES THIS MEAN? (CONT.)

 Work on conversational content third (Speech-Language) Pathologist and Parent) (Practice, Practice, Practice!): "The 'art' of verbal flirting is really just a matter of knowing the rules of conversation, the unwritten laws of etiquette governing talking and listening. The best and most enjoyable conversations may seem entirely spontaneous, but the people involved are still obeying rules. The difference is that they are following the rules automatically, without consciously trying, just as skilled, experienced drivers do not have to think about changing gears. But understanding how the rules of conversation work – like learning how and when to change gears – will help you to converse more fluently, and flirt more successfully."

Social Issues Research Centre (No date). <u>SIRC Guide to Flirting</u>, <u>http://www.sirc.org/publik/flirt.html</u>,

pages 1 to 16.

Social Issues Research Centre (SIRC) Guide to Flirting (Continued)

Social Issues Research Centre (No date). <u>SIRC</u> <u>Guide to Flirting</u>, <u>http://www.sirc.org/publik/flirt.html</u>, pages 1 to 16.

This offers an excellent scientific (& lay person friendly) description of human flirting behavior and can be used as a teaching tool.

What is a Date?



"Going out with someone in an identified setting such as a restaurant, cinema, or cultural event with the intent of getting to know them better to see if you would be interested in developing a romantic relationship." (p. 253)

Baker, J. (2005). <u>Preparing for Life: The Complete Guide for Transitioning to</u> <u>Adulthood for those with Autism and Asperger's Syndrome</u>. Arlington, TX: Future Horizons.

Immaturity



Anne Ford wrote, "The most successful dates or boyfriend-girlfriend relationships I have seen in the LD community are between two adults with similar levels of disability who act more like best friends than lovers...When you find someone like that, other guirks and oddities of behavior don't matter that much." (p. 64-65)

Ford, A. (2007). <u>On Their Own: Creating an Independent Future for Your Adult Child</u> with Learning Disabilities and ADHD. New York, NY: New Market.

Where to Find a Date

- School & school social clubs
- Youth groups
- Places of worship and specialized clubs/groups sponsored by them
- Job training center
- Friends and family
- Internet
- Singles events



• Gym, library, dance clubs, parties, etc.

Baker, J. (2005). <u>Preparing for Life: The Complete Guide for Transitioning to</u> <u>Adulthood for those with Autism and Asperger's Syndrome</u>. Arlington, TX: Future Horizons.

Rules for Internet Dating



- Do not give out your home address or phone number.
- Always meet for the first time in a public place far from home (i.e., restaurant, coffee shop, etc.).
- Realize everything said on the internet is not true.
- Use a reputable internet dating service for added security.
- Ford, A. (2007). <u>On Their Own: Creating an Independent Future for Your Adult Child</u> with Learning Disabilities and ADHD. New York, NY: New Market.

ASD and Sexual Harassment

"We do recognize that problems with sexual expression and experiences can lead to a person with Asperger's syndrome being charged with a sexual offence. The charge tends to be for sexually inappropriate behaviour rather than sexually abusive or sexually violent behaviour...The person may have difficulty distinguishing between kindness and attraction, and assume a friendly act was an indication of romantic or sexual attraction." (p. 339)

Attwood, T. (2007). <u>The Complete Guide to Asperger's Syndrome</u>. Philadelphia, PA: Jessica Kingsley, p. 130.

Charli: An Adult on the Spectrum

"...I often engaged in activity that today would be called 'stalking.' While I truly intended no harm, I experienced unbearable loneliness and if some handsome young man appeared on the periphery of my solitary life, my better judgment deserted me." (p. 38)

Grandin, T. (2012). <u>Different...Not Less: Inspiring Stories of Achievement and</u> <u>Successful Employment From Adults with Autism, Asperger's and ADHD</u>. Arlington, TX: Future Horizons.



- Kids with an "invisible disability" and an aid in a mainstream class are often seen as weird and shunned.
- The more the child is seen around the school without the aid the better.
- More restrictive environment can be a dumping ground: Conduct Disorder & Victim
- Without intensive social skills training in childhood the child will not be prepared for puberty.
- Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty and</u> <u>Beyond</u>. Arlington, TX: Future Horizons.



- Have your kid assigned a "social helper student":
 - The child with excellent social skills in your class, who is a "good citizen" and good student.
 - Train the helper student in how to be a helper student.

Thompson, S. (1996). <u>Neurobehavioral Characteristics Seen in the</u> <u>Classroom: Developing an Educational Plan for the Student with NLD</u>. From NLD on the Web: <u>www.nldontheweb.ogr/thompson-5.htm</u>.



"An associate is someone who helps you perform an activity. This is someone you can trust long enough to complete that activity...Many autistic adults who find partners report those partners entered their life as trusted associates, people who could be relied on to share necessary or even enjoyable activities. "(p. 26-27)

 The person with ASD should be taught that just because someone is a trusted associate does not make them a potential date!

Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty and</u> <u>Beyond</u>. Arlington, TX: Future Horizons.



- Often the ASD child and adolescent does not have any friends, however, forcing them to interact socially may cause more harm than good.
- Get them involved in after school activities, clubs etc. they might be interested in and they will find others interested in the same things.
- Encouraging them when they start to show interest in someone.
- Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty</u> <u>and Beyond</u>. Arlington, TX: Future Horizons.

ASD and Sexuality



- Sports, PE (adaptive/or not), aerobic exercise, working with a fitness instructor etc. can help with appearance, confidence and fitness if done in a way that meets the child's/teen's needs.
- Newport, J., and Newport, M. (2002). <u>Autism-Asperger's & Sexuality: Puberty and</u> <u>Beyond</u>. Arlington, TX: Future Horizons.

Examples of "The Rules"



- If someone says "no" to going on a date with you three times (with more than one week between invitations) the person is 'saying nicely', "no I do not want to go out with you." Don't ask them again.
- Don't expect physical contact on the first several dates. Maybe hold hands on second date, kiss at door good night.
- Don't ask him in on the first several dates.

Ask Questions



- "Be friendly and engaging"- Ask open ended questions about them (teach this)
- Teach them how to respond to questions about themselves. Short, truthful, etc.
- Remember the best pick up line is, "Hi my name is..."

Be Mannerly



- Use proper table educate.
- Don't eat too fast or two slow.
- Choose activities and food your date and you would probably like.
- Avoid your "special topic". Try to show interest in their special topic.
- The pace for all this is **SLOW**!!!

Touching



- The first touch should be on the forearm/back of shoulder (typically non-threatening).
- If not rejected later touch hand.
- Later hold hand...
- If they say, "NO" then NO means NO!
- Social Issues Research Centre (No date). <u>SIRC</u> <u>Guide to Flirting</u>,

http://www.sirc.org/publik/flirt.html,

pages 1 to 16.
Celibacy



"I have remained celibate because doing so helps me to avoid the many complicated social situations that are too difficult to handle. For most people with autism, physical closeness is as much a problem as not understanding social behavior." (Dr. Temple Grandin, p. 133)

Grandin, T. (1995). <u>Thinking In Pictures: And Other Reports From My Life With</u> <u>Autism</u>. New York, NY: Vintage.

Anita Lesko: Adult on the Spectrum

 Registered nurse anesthetist & aviation photojournalist

"I haven't been on a date for 14 years. I realize this is shocking to most people, but it just happened this way because of all the things I've been doing with my time. I didn't make a conscious decision not to date – it just happened." (p. 201)

Grandin, T. (2012). <u>Different...Not Less: Inspiring Stories of Achievement and</u> <u>Successful Employment From Adults with Autism, Asperger's and ADHD</u>. Arlington, TX: Future Horizons.

Sex Therapists and Educators

- American Association of Sexuality Educators and Therapists: <u>www.aasect.org</u>
 - There are professionals in this organization that work with those with disabilities.

