

# The Social Dimensions of AD/HD: A “Neurosocial” Perspective

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In the efforts to comply with the appropriate boards/associations, I declare that I do have affiliations with or financial interest in a commercial organization that could pose a conflict of interest with my presentation.

# The Social Dimensions of Neurodevelopmental Disorders: A Neurosocial Overview

Kevin T. Blake, Ph.D.

Owns shares in the following companies:

Amgen, Inc.

Johnson & Johnson, Inc.

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# 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). The Blank Slate: The Modern Denial of Human Nature. New York, NY: Viking.

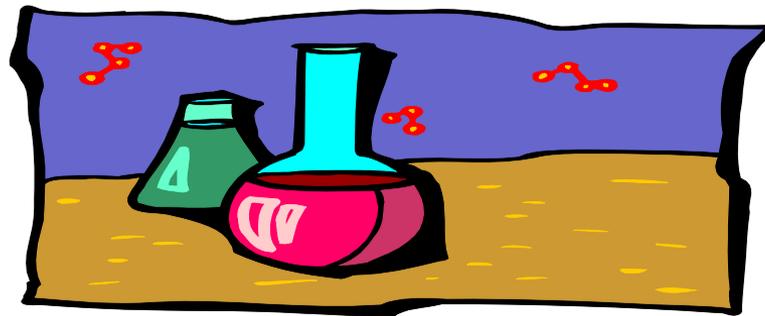
- AD/HD is not caused by child rearing practices or environmental experience.

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

# What does “neurobiological” mean?

80 to 85% of the cases of AD/HD are genetic in origin. I.Q. is 60 to 65% genetic.

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



# What Does Neurobiological Mean?

1. Damage to different neural networks may cause AD/HD symptoms (*ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, NOT OTHERWISE SPECIFIED: ACQUIRED AD/HD*).
2. Differences in Brain Development may cause them, too (More Common).

Swanson, J., and Castellanos, X. (1998). Biological Bases of Attention Deficit Hyperactivity Disorder: Neuroanatomy, Genetics, and Pathophysiology. Available from-  
<http://addbalance.com/add/nih/19981118c.htm>,



# Social Disorders

- Over half of all AD/HD children will suffer social rejection because of social interaction problems.
- Impulsivity?

Barkley, R.A. (1998). Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, Second Edition. New York, NY: Guilford, p. 191.



# Social Disorders

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

..



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

# 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). Hyperactive Children Grown Up (Second Edition). New York, NY:Guilford.**

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

# Social Disorders



- Men with Inattentive 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, PI men less talkative, less assertive 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. ADHD Report, 12 (2), pp. 1-6.

*ATTENTION-DEFICIT/HYPERACTIVITY  
DISORDER, COMBINED TYPE*



# AD/HD and Gender



- Quinn and Nadeau (2002) believe there should be female symptoms for AD/HD.
- Goldstein and Gordon (2003) say there is no research to justify this.
- ***However, AD/HD girls suffer more socially than AD/HD boys.***

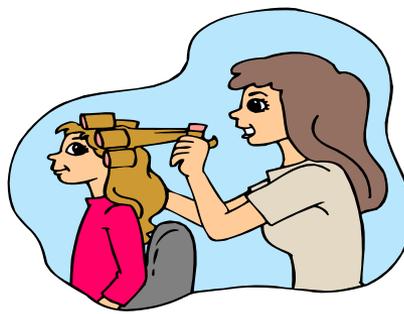


Quinn, P. O., and Nadeau, K.G. (2002). Gender Issues and AD/HD. Silver Spring, MD: Advantage.

Goldstein, S. and Gordon, M. (August, 2003). Gender Issues and ADHD: Sorting Fact From Fiction. ADHD Report, 11 (4), 7-11, 16.

Langer, H. (2002). Role Expectations. In P.O. Quinn and K.G. Nadeua (Eds.), Gender Issues and AD/HD. Silver Spring, MD: Advantage, pp. 70-80.

# Compassion



- 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). Human and Animal Languages: In a Sense of Future. 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). Thinking In Pictures: And Other Reports From My Life With Autism. New York, NY: Vintage.**

# Alexithymia **MAY** BE A NEUROBIOLOGICAL DISORDER!

***25% OF THOSE WITH  
AD/HD HAVE  
ALEXITHYMIA.***

**Ratey, J.J., Hallowell, E.M., and Miller, A.C. (1995). Relationship Dilemmas for Adults with ADD: The Biology of Intimacy. In K. Nadeau (Ed.), A Comprehensive Guide to Attention Deficit Disorder In Adults. New York, NY: Bruner Mazel, pp. 218-235.**



# ***“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 verbalising feelings
- Limited emotional content in the imagination
- Functional style of thinking
- Lack of enjoyment and pleasure-seeking
- Stiff, wooden posture

**Author (July 28, 2003). The Alexithymia FAQ. From web site: [www.alexithymia.info/faq.htm/](http://www.alexithymia.info/faq.htm/) .**

# How To Treat Alexithymia

- Lane and Schwartz did extensive research into matching the emotional awareness of patients to the type of psychotherapy and psychopharmacology. Together they came up with the following to determine which types of interventions works best with which patients.



# Treatments Connected to Emotional Level

5. Prefrontal Cortex-Blends of Blends of Emotion-Existential Crisis-Existential, Insight therapy
4. Paralimbic-Blends of Emotions-Neurosis-Insight Therapy

3. Limbic-Discrete-Emotion-Persistent conscious distress (e.g., anxiety)-Cognitive Therapy
2. Diencephalon-Action Tendencies-Impulsive or compulsive behavior-B Mod, Movement therapy, Physical restraint

# Treatments Connected to Emotional Level

1. Brainstem-  
Visceral  
Activation-  
Somatic distress-  
Pharmacological,  
biofeedback,  
relaxation.

Lane, D.D., and Schwartz, G.E. (1992).  
Levels of Emotional  
Awareness: Implications for  
Psychotherapeutic Integration.  
Journal of Psychotherapy  
Integration, 2 (1), pp. 1-18 [From  
reprint].



# Web Site and Professionals Who Can Help With Alexithymia

- Alexithymia Information Resource:  
[www.alexithymia.info](http://www.alexithymia.info)
- Psychologists-American Psychological Association: [www.apa.org](http://www.apa.org)
- Psychiatrists-American Psychiatric Association:  
[www.apa@psych.org](http://www.apa@psych.org)
- Social Workers-National Association of Social Workers: [www.naswdc.org](http://www.naswdc.org)
- American Association of Marriage and Family Therapists: [www.aamft.org](http://www.aamft.org)
- Counselors-National Board of Certified Counselors:  
[www.nbcc@nbcc.org](http://www.nbcc@nbcc.org)

# Professionals Who Can Help With Alexithymia (Continued)

- Behavioral Neurology/Neuropsychiatry-  
American Neuropsychiatric Association:  
[www.anpaonline.org](http://www.anpaonline.org)
- Speech Language Pathologist-American  
Speech-Language Hearing Association:  
[www.professional.asha.org](http://www.professional.asha.org)

# Mememes

- “A meme (pronounced ‘meem’) is ‘an idea, behavior, style or usage that spreads from person to person within a culture...But controversy has erupted over the proposal, presented here by psychologist Susan Blackmore, that human’s uncanny ability to imitate, and thus to transmit memes, is what sets us apart from other species. Memes, she argues, have been (and are) a powerful force shaping our cultural – and biological –evolution” (p. 65).

Blackmore, S. (October 2000). The Power of Memes (Editor’s Introduction). Scientific American, 283 (4), pp. 64-66,68-71,73.





# *Memes*

- In a final twist, it would pay for people to mate with the most proficient imitators, because by and large, good imitators have the best survival skills. Through this effect, sexual selection guided by memes, could have played a role in creating our big brains. By choosing the best imitator for a mate women help propagate the genes needed to copy religious rituals, colorful clothes, singing, dancing, and so on...our big brains are selective...

# Mememes (Continued)

- “...imitation devices built by and for the mememes such as for genes” (p. 69).

Blackmore, S. (October 2000). The Power of Mememes (Editor’s Introduction). Scientific American, 283 (4), pp. 64-66,68-71,73.



# Mememes



- Barkley spoke of how many of those with AD/HD have difficulty with the internalization of speech, and how this in turn can make AD/HD people vulnerable to others “stealing their ideas”.
- In addition, their impulsivity may cause problems with vicarious learning. Those with AD/HD may have trouble “sealing” the ideas of others.

**Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.**



# Dyssemia

- Those with AD/HD have trouble with vicarious learning and would be expected to have trouble learning non-verbal social interaction which is not directly taught. Their impulsivity would make it difficult for them to attend to the non-verbal cues of others, too.

**Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.**

# ***Childhood Makes Us Special!***



- Human childhood is about 500,000 year old.
- The new born brain is 25% of adult size. This is not the case of other primates.
- “...complex brain wiring develops when people interact with others and the outside world” (p. B7).
- This allows for the development of language, a social system, parental bonds, and culture.

**Begley, S. (September 16, 2004). Childhood May Separate Humans From Apes. The Wall Street Journal, 244 (54), p. B1 and B7.**

# Play

- AD/HD Children are at great risk for being socially rejected due to their AD/HD symptomatology.

**Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.**





# *Play*

- Children develop fine and gross motor skills through play.
- This in turn creates relationships, self-esteem and acceptance by others.

Lerner, J. (1997). Learning Disabilities: Theories, Diagnosis, and Teaching Strategies, Seventh Edition. Boston, MA: Houghton Mifflin.



# Play

- Isolation hinders children's social and cognitive development.
- Play also directly affects the development of the frontal lobe...executive function.
- Isolation may worsen the genetic problems with executive function caused by AD/HD.
- It can hinder the development of "theory of mind".
- It may also hinder the development of a sense of morality, social roles and the ability to bond with others.

**Azar, B. (March, 2002A). Its More Than Just Fun and Games. Monitor On Psychology, 33 (3), pp. 50-51.**

**Azar, B. (March 2002B). The power of Pretending. Monitor On Psychology 33 (3), pp. 46-47.**

# Executive Memory Function 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”

**(Wechsler Adult Intelligence Scale- Third Edition, Wechsler Memory Scale-Third Edition (1997). Technical Manual. San Antonio, TX : Psychological Corporation.)**

**(Brown, T. E. (October 11, 2001). Assessment and Treatment of Complicated ADHD Across the Lifespan. Seminar Presented at the Arizona Association of School Psychologists 33<sup>rd</sup> Annual Conference, Mesa, AZ.)**

**(Frith, C. D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. Science, **286**, pp. 1692-1695.)**

# Executive Functioning and 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. Perspectives, 29 (2), p. 20-22.**

# Working Memory and AD/HD



- “AD/HD kids are not ‘clueless’. They’re ‘cueless’.”

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

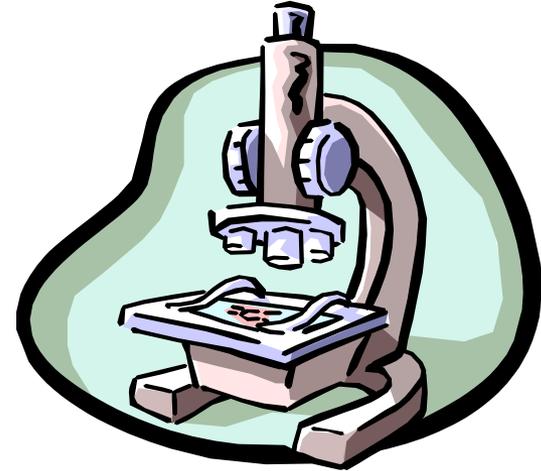
# EF and AD/HD



- 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. ADHD Report, p. 12-13.**

# Summary of Barkley's Theory



Step 1: *Response Delay*

Step 2: *Prolongation*

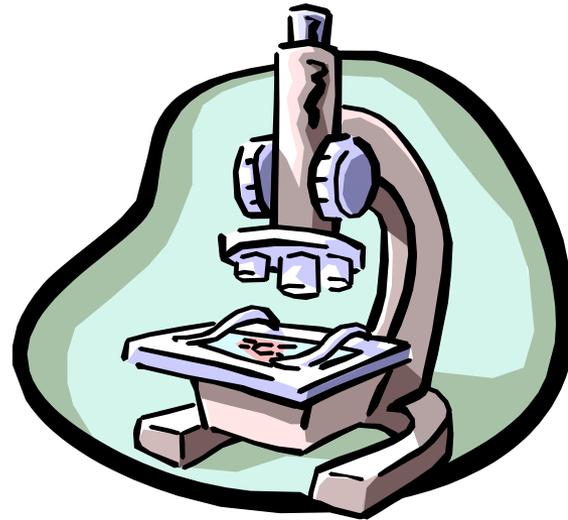
Step 3: *Rule Governed Behavior*

Step 4: *Dismemberment of the Environment*

Barkley, R.A. (1997). ADHD and the Nature of Self-Control. New York, NY: Guilford.

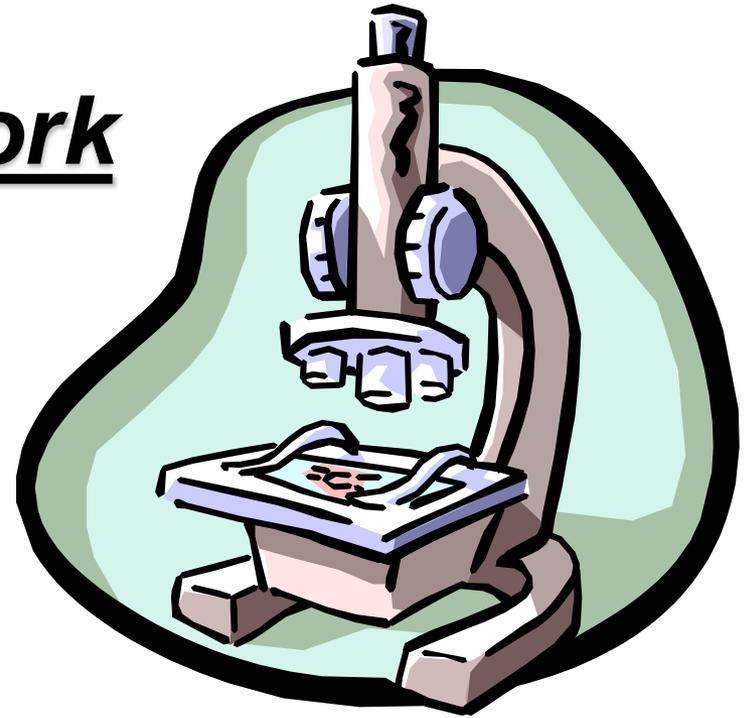
# Brown's Theory Summarized

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



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

# *Your Tax Dollars at Work*

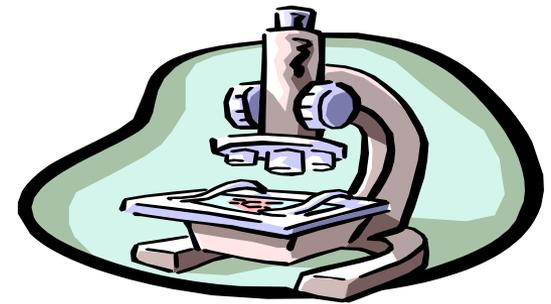


The Multimodal Treatment Study of Children with  
Attention Deficit Hyperactivity Disorder

(MTA Study)

1999

# MTA Study



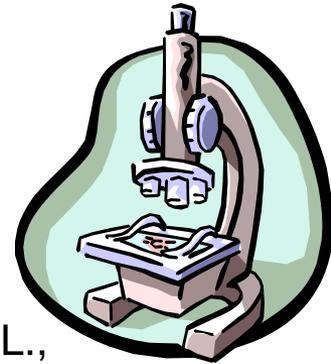
- Medication Management Treatment Group did best. 50% decline in symptoms.
- Medication with Behavioral Modification Group did no better.
- Behavior Modification Group did better than placebo.
- Community Treatment only had 25% decline in symptoms.
- Medication helps with social interaction.

**NIMH Research Treatment for Attention Deficit Hyperactivity Disorder (ADHD): The Multimodal Treatment Study – Questions and Answers. From website:**

[www.nimh.nih.gov/chilfhp/mt.aqu.cfm](http://www.nimh.nih.gov/chilfhp/mt.aqu.cfm)

# MTA Study

- “Based on these findings, we concluded that for AD/HD symptoms, a closely monitored medication approach of the MTA was superior to behavioral treatment alone and routine community treatment that included medication. Combined treatment offered slightly greater benefits than medication management alone for AD/HD symptom reduction as well as for other domains, such as peer relations, parent-child relations and academic outcomes” (p. 64).
- Combined group used 20% less medication than Medication only group.
- 24-month follow-up same basic results.

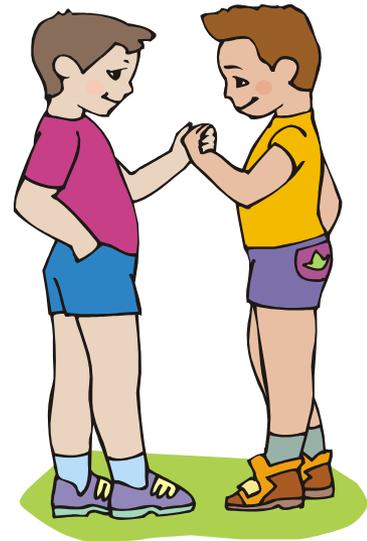


Jensen, P.S., Abikoff, H.B., Arnold, L.E., Epstein, J., Greehill, L.L., Hechtman, L., Hinshaw, S.P., March, J.S., Newcorn, J.H., Swanson, J.M., Vitello, B., Wells, K., and Wigal, T. (2006-2007). A 24-Month Follow-up to the NIMH MTA Study. The New CHADD Information and Resource Guide to AD/HD. Landover, MD: CHADD, pp. 64-67.

# Medication and Social Interaction

- “The medications used to treat AD/HD often have positive social effects; in fact most children feel an improvement in the way they relate to others” (Aull, April, 2005, p. 36).

Aull, E.B. (April, 2005). Social Skills Improvement with AD/HD Medication. Attention!, 12 (2), pp. 34-37.





# 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, ADHD Report, 12 (6), 1-3.**

# Possible Alternative Medicine Treatment for Combined Type AD/HD



- Working Memory Training:
  - Torkel Klingberg, M.D., Ph.D.
  - Karolinska Institute- Stockholm, Sweden
  - CogMed software company
  - **MAY** help relieve executive functioning difficulties in Combined Type AD/HD.
  - **More Research is needed!**

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

Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. ADHD Report, 14 (1), pp. 9-11.

# AD/HD and Social Skills Training

- Improved social skills in AD/HD children does not lead to better social acceptance. Why? Their poor reputation proceeds them.
- With AD/HD children start social skills training early.
- Include their peers in the treatment.
- Explain AD/HD to their peers.



**Antshel, K.M. (February, 2005) Social Skills Training Reconsidered: What Role Should Peers Play? ADHD Report, 13 (1), pp. 1-5.**

# AD/HD & CAPD



- Comorbidity rates between AD/HD and Central Auditory Processing Disorder (CADD) is between 45 and 75%.
- CAPD will often respond to Stimulant Medication (Tannock and Brown, 2000).
- 50% of AD/HD adults reported hypersensitive hearing (Hyperacusis)
- CAPD may be Inattentive AD/HD (Barkley, 2002)

Tannock, R., and Brown, T.E. (2000). Attention-Deficit Disorders in Children and Adolescents, In T.E. Brown (Ed.), Attention-Deficit Disorders and Comorbidities in Children, Adolescents, and Adults. Washington, DC: American Psychiatric Press, pp. 231-296.

Johnson, M.J. (1998) Having ADD and Being Hypersensitive: Is There A Connection?. From website:<http://www.add.org/articles/hypersen.html>

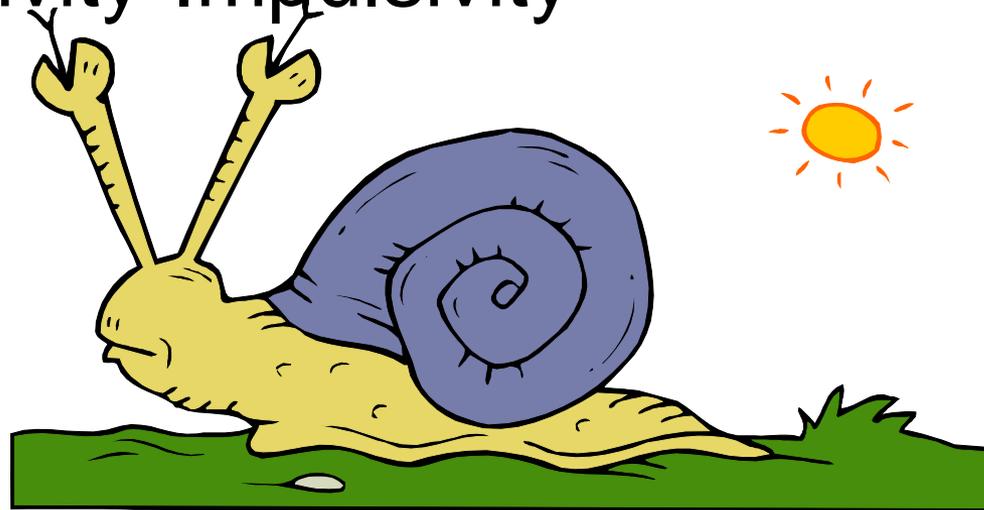
Barkley, R.A. (2002). AD/HD and Oppositional Defiant Children. Seminar Presented February 19-20, Phoenix, AZ.

ATTENTION-DEFICIT/HYPERACTIVITY  
DISORDER, PREDOMINATELY  
INATTENTIVE TYPE



# Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type (DSM-IV, TR # 314.00)

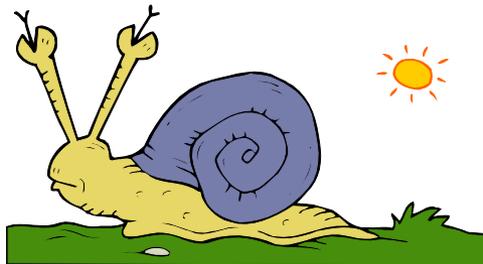
- Brown believes the Inattentive Type has all the symptoms of the Combined Type except Hyperactivity-Impulsivity



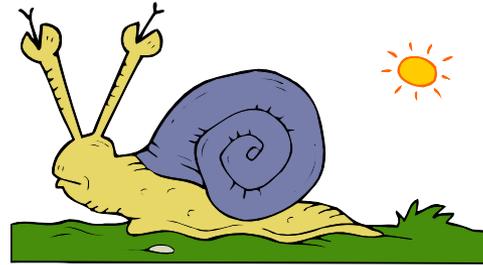
# Inattentive AD/HD (Continued)

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



# Brown and Inattentive AD/HD (Continued)

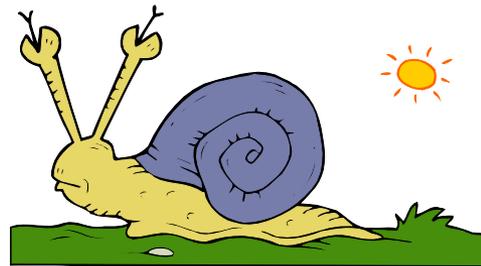


4. Problems managing affective interference
5. Problems utilizing working memory and accessing recall

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

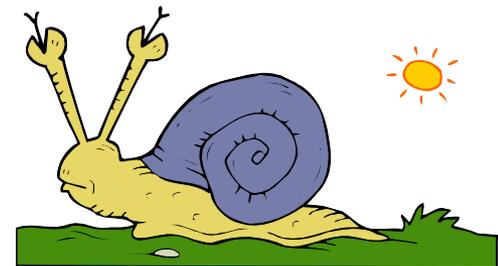
# Barkley's Comments on Inattentive AD/HD Symptoms

- They tend to be in a FOG
- Not very Attentive
- High levels of Generalized Anxiety
- Lethargic
- Slow moving



# Barkley (Continued)

- Slow intellectual processing speed
- Short-term memory problems
- Sequential memory problems
- Don't fully process information



# Barkley (Continued)

- Difficulty discerning relevant from irrelevant Information

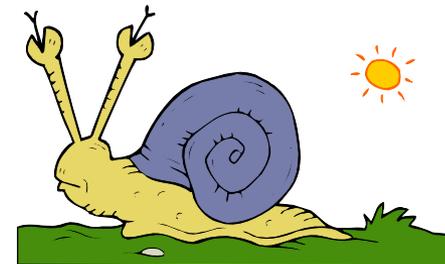
(Barkley, R.A. (1994). ADHD in Children, Adolescents and Adults: Diagnosis Assessment and Treatment. New England Educational Institute, Cape Cod Symposia, August, Pittsfield, MA.)



# ***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

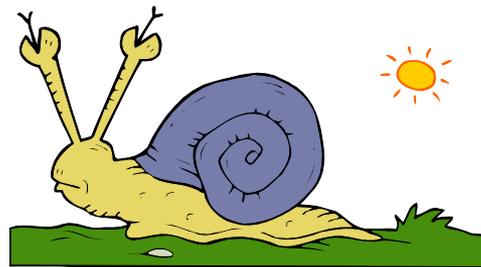
**Willcutt, E.G., Chhabildas, N., and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. ADHD Report, 9 (1), pp. 2-5.**



# Mild Combined Type vs. Inattentive Type

30% to 50% of those with Inattentive AD/HD have the SCT subtype. The remainder are Shadow Syndrome Combined Type.

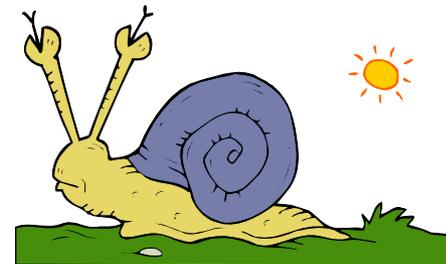
**Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14<sup>th</sup> Annual CHADD International Conference, Miami Beach, FL.**



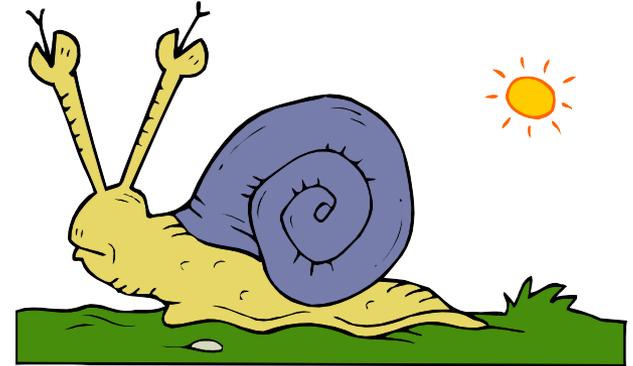
# Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive-Impulsive Type (DSM-IV, TR #314.01)

- Tzelepis stated she has only seen Combined Type adults in her work and doubts the Predominately Hyperactive-Impulsive Type exists in adults.

**Tzelepis, A., and Mapou, R. (1997, May). Assessment. Paper presented at the Pre-Conference Professional ADD Institute of the 3<sup>rd</sup> Annual National ADDA Adult ADD Conference, St. Louis, MO.**



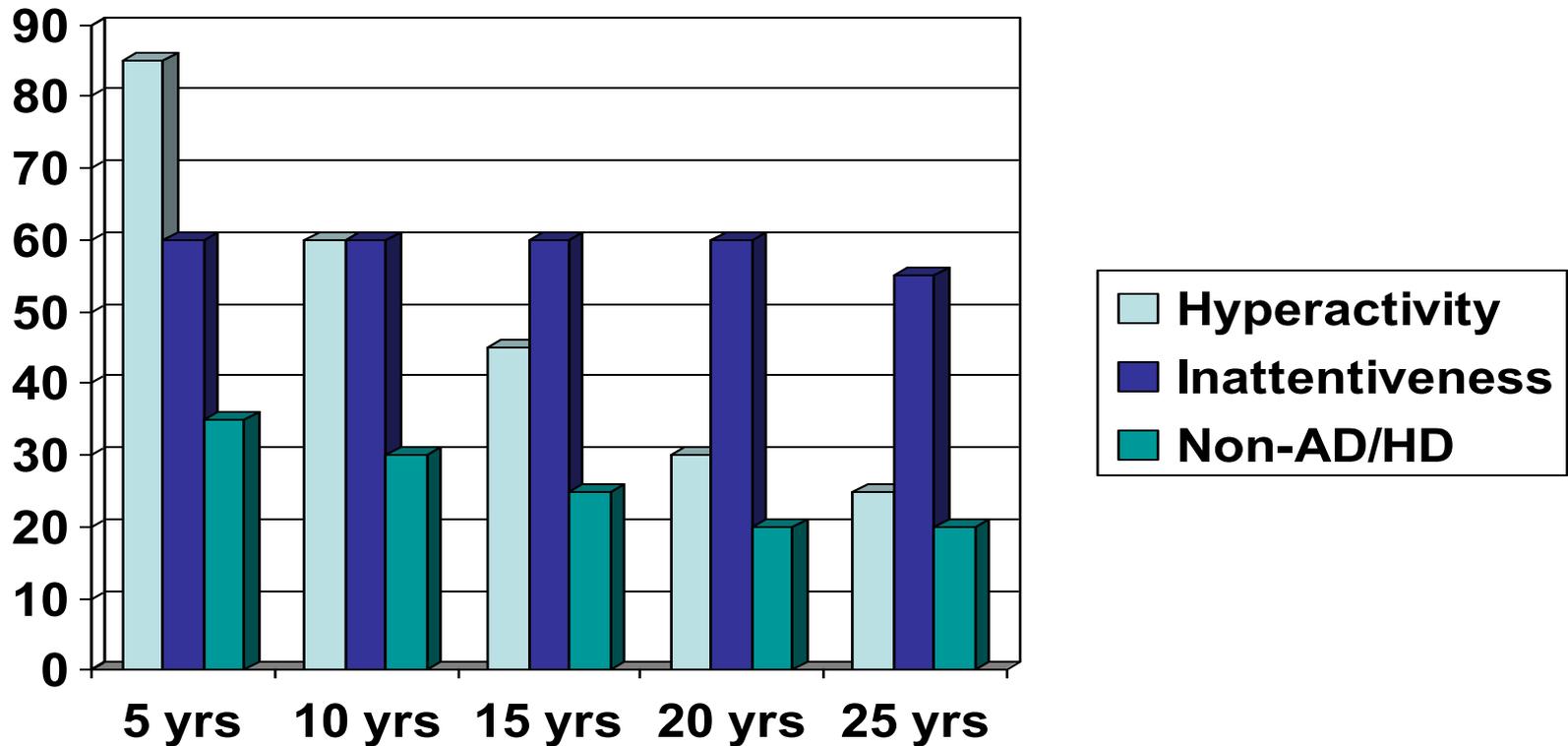
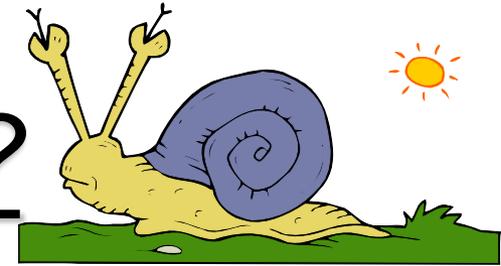
# Brown



Brown called those who met DSM criteria for Hyperactive-Impulsive Type or Combined Type in Childhood, but only met criteria for Inattentive Type in Adulthood, “**CROSSOVERS**”.

**Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in Adults. In K.G. Nadeau (Ed.), A Comprehensive Guide to Attention-Deficit Disorder in Adults. New York: Bruner/Mazel, pp. 93-108.**

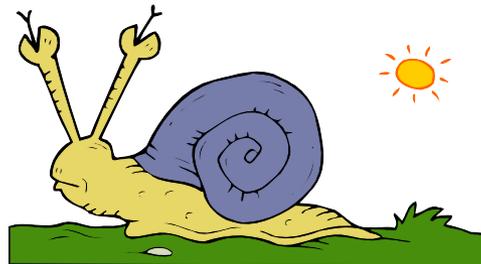
# Crossovers?



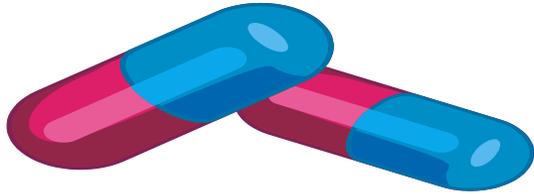
# Crossovers (Continued)

Barkley wrote when the Combined Type changes to the Inattentive Type by adolescence or adulthood then the person should be thought of as having the Combined Type.

**Barkley, R.A. (2002B). ADHD and Oppositional Defiant Children. Seminar presented, February 19-20, Phoenix, AZ., The Institute for Continuing Education, Fairhope, AL.**



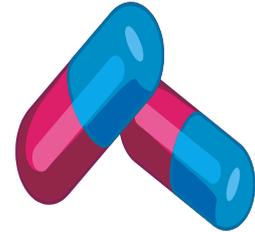
# Medication and Inattentive AD/HD



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

# Medication and Sluggish Cognitive Tempo AD/HD



- Strattera (Atomoxetine):
  - Selective Norepinehrine Reuptake Inhibitor  
Good for depression & anxiety too
  - Schedule II: Not Controlled – Call in Scripts
  - Side Effects: insomnia, nausea, dry mouth, constipation, dizziness, decreased appetite, urinary difficulty, erectile disturbance, decrease libido, slight increase in blood pressure and pulse, liver problems (rare)

Author (2004). Managing Medication for Adults with AD/HD. National Resource Center on AD/HD (A Program of CHADD), p. 1-12; From Website: [www.helpforadhd.org/documents/wwk10.pdf](http://www.helpforadhd.org/documents/wwk10.pdf).

# Medications and Sluggish Cognitive Tempo AD/HD



- Provigil (Modafinal)
  - Will be marketed at “**Sparlon**” as an AD/HD medication
  - Significantly reduces inattention, hyperactivity and impulsivity in home and school, no withdrawal rebound
  - Few side effects: Insomnia (28%), Headache (22%), Decreased Appetite (18%), Abdominal Pain; Insomnia and Appetite problems decrease with time
  - Low abuse potential/Not a controlled substance-  
Schedule IV Medication
  - May increase right frontal lobe wakefulness, alerting and executive functioning

# Medication and Sluggish Cognitive Tempo AD/HD (Continued)

- The FDA recently rejected approving Modafinil as an AD/HD medication.

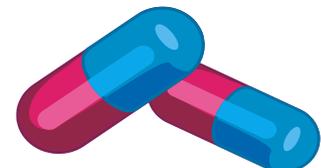
Author (February/March, 2006) Two New Medications Promise greater Convenience, Smaller Potential for Abuse. ADDitude, 6 (4), p. 11.

Kelly, J. (August, 2005). Phase III Trials Demonstrate Modafinil Efficacy in ADHD. NeuroPsychiatry Reviews, 6 (7),  
[www.neuropsychiatryreviews.com/aug05/modafinil.html](http://www.neuropsychiatryreviews.com/aug05/modafinil.html) .

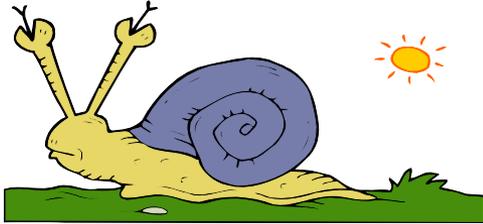
Author (March 24, 2006). FDA Committee Rejects ADHD use for Modafinil. National Public Radio report. Available from website:  
[www.npr.org/templates/story.php?StoryId=5298885](http://www.npr.org/templates/story.php?StoryId=5298885) .

## *Other Reference of Interest*

Biederman, J., Swanson, J., Wigal, S.B., Kratochvil, C.J., Boellner, S.W., Earl, C.Q., Jiang, J. and Geenhill, L. (December, 2005). Efficacy and Safety of Modafinil Film-Coated Tablets In Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: results of A Randomized, Double-Blind, Placebo-Controlled Flexible-Dose Study. Pediatrics, 116 (6), pp. e-777-e-784; From Website:  
[www.pediatrics.aappublications.org/cgi/content/full/116/6/e777](http://www.pediatrics.aappublications.org/cgi/content/full/116/6/e777) .



# Conclusion about Inattentive ADHD



- It is a separate and distinct disorder from the Combined Type

Milich, Balentine, and Lynam, 2002; Barkley, 2002A;McBurnett, 2001; Brown, 1997

- Most likely in DSM-V the Combined Type will be in the Disruptive Behavior Disorders Section. The Inattentive Type will be elsewhere.

**Barkley, R.A. (2002A-Tape-1). ADHD Symposium: Nature Diagnosis and Assessment Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Distributed by Stonebridge Seminars, Westborough, MA 01581.**

# 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, ADHD Report, 9 (2), pp. 5-9)

(Gillberg, C., and Kadesjo, B. (2000). Attention-Deficit/Hyperactivity Disorder and Developmental Coordination Disorder. In T.E. Brown (Ed.), Attention-Deficit Disorders and Comorbidities in Children, Adolescents and Adults. Washington, DC: American Psychiatric Press, pp. 393-406.)

# Developmental Coordination Disorder (DCD)



- These children have significant difficulty learning and internalizing tasks. It's not the timing of when they learn the tasks.

Fox, A.M. (Summer, 1998). Clumsiness In Childhood : Developmental Coordination Disorder. Learning Disabilities, 9 (2), pp. 57-64.

# Developmental Coordination Disorder

“Learning to ride a bike, play board games, cards, and sports are all supposed to be fun and a normal part of growing up, but they are difficult for anyone with a spatial learning disability. Being accepted is paramount to any fourth grader. I desperately wanted to do the same things I saw the other kids doing...” (Britt Neff, p. 42).

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



# DCD and Helpful Professionals



- American Occupational Therapy Association: [www.aota.org](http://www.aota.org)
- American Physical Therapy Association: [www.apta.org](http://www.apta.org)
- American Speech-Language Therapy Association: [www.professional.asha.org](http://www.professional.asha.org)
- Behavioral Neurologists: [www.anpaoline.org](http://www.anpaoline.org)
- Mental Health Professionals
- Neuro-Ophthalmologists: [www.ama-assn.org](http://www.ama-assn.org)

*Thank you for attending! Any questions?*

