AD/HD and Executive Functioning Deficits

Assessment and Impact upon Personality Functioning

Definitions- ICD

- AD/HD "…falls into a category of disorders known as hyperkinetic disorders that are characterized by: early onset, a combination of overactive, poorly modulated behavior with marked inattention and lack of persistent task involvement; and pervasiveness over situations and persistence over time of these behavioral characteristics… Impaired attention is manifested by prematurely breaking off from tasks and leaving activities unfinished. The children change frequently from one activity to another, seemingly losing interest in one task because they become diverted to another… Over-activity implies excessive restlessness, especially in situations requiring relative calm. It may, depending upon the situation, involve the child running and jumping around, getting up from a set when he or she was supposed to remain seated, excessive talkativeness and noisiness, or fidgeting and wriggling (pp. 262-265)."

Definitions- DSM-IV-TR & NIMH

- Hyperactivity
- Impulsivity
- Inattention

Definitions- Parent Description

An excellent description of AD/HD, from an article by Ingrid Yollick Alpern titled "Will my Son Ever Achieve?" (Smith Alumnae Quarterly, Spring 2005), is quoted below:

- "ADHD is an inherited, lifelong disorder thought to be linked to genes that affect the transport of dopamine, a chemical messenger in the brain. In people with ADHD, too little dopamine is available, primarily in the part of the brain that controls 'executive function,' or cognitive skills like forming a plan and controlling reactions to stimuli. Essentially, people with ADHD tend to have weak short-term memory, difficulty making transitions between activities, and a limited ability to plan and to inhibit thoughts, speech, and actions. While all AD/HD people exhibit some degree of impulsivity, the severity and type of executive dysfunction differs from case to case. Not all ADHD children are overtly hyperactive.
- "Impulsivity, or 'disinhibition,' is the central element of ADHD. This inability to control reactions to stimuli may well explain all behaviors that characterize ADHD. For example, ADHD kids talk or move excessively, even those not classified as hyperactive. ADHD kids have trouble sticking to repetitive tasks. Their attention quickly slides to any activity that's more exciting and immediately reinforcing. Tasks like homework don't stand a chance. But it's a myth that ADHD kids can't concentrate. They can 'hyperfocus' on what interests them and block out everything else…
- "Between 3 and 7 percent of children who have ADHD (about one or two in every classroom), and at least 60 percent carry the symptoms into adulthood. While there's no cure for ADHD, research suggests that medication, such as Ritalin and Adderall, makes more dopamine available in the brain, increasing the ability to focus. Without medication, progress with behavioral and educational interventions is difficult, often impossible."

Executive Functions– What are they?

- Psychodynamic Diagnostic Manual (PDM), a 2006 publication of the *Alliance of Psychoanalytic Organizations*
- "…cognitive abilities necessary for complex goal-directed behavior and adaptation to a range of environmental changes and demands. Functions include the ability to plan and anticipate outcomes (cognitive flexibility), the ability to direct attentional resources to meet the demands of non-routine events, and self-monitoring and self-awareness, which are necessary for appropriateness of behavior and behavioral flexibility."

Executive Functions– What are they? (cont.)

- refer to many different abilities, such as organization, planning, attention, and concentration.
- analogous to an executive employee whose job it is to organize and assure things are running smoothly.
- measure of the brain's ability to absorb information, interpret it, and make decisions based upon it.
- Executive functions are strongly interrelated with all academic subjects and social/communication situations. The curriculum in the later elementary grades and in junior high/high school requires the student to derive information from increasingly complex text, reproduce this information in appropriately organized written form, and to do so in an increasingly independent manner, which requires good planning and time management skills. Rather than specific academic curriculum **content**, educational goals for improving executive functioning should be focused on the development of a learning and/or problem-solving **process** designed to enhance the efficient learning and memory of academic information. The emphasis of support should be on teaching, modeling, and cuing an approach to self-management of learning through active planning, organization, and monitoring of work.
- Adapted from the *BRIEF* manual

Relationship to Disorders of the Self

- Learning Disorders and Disorders of the Self in Children and Adolescents
- **Joseph Palombo**, Institute for Clinical Social Work
- W.W. Norton & Company (2001)

Disorder of the Self

- Development of the sense of self- associated with the child's experience of the self.
- Emergence of the self-narrative- associated with child's integration of the meaning of those experiences.
- "Children's subjective experiences are filtered through their neuropsychological deficits and the context in which they are raised. Each restrict, modify, or impose constraints on the child's experiences, while caregivers influence the child's interpretations of those experiences. A pattern of reciprocal and circular interchanges between the child, the deficits, and the context is the hallmark of the interactions that ensue. (page 5, Palombo).
- Different outcomes– psychopathological manifestations.

Palombo's Concept of Disorders of the Self

Taking as his starting point the principle that all psychopathology must be understood from a developmental perspective, Palombo conceptualizes disorders of the self as occurring at the intersection between the context within which the child is raised and the neuropsychological strengths and weaknesses he or she brings to that context. The desire for a cohesive sense of self and coherent self-narrative is a central motive organizing the child's development. When a child has a learning disorder and the relationship between the child's context and neuropsychological deficits is out of balance, the effects are seen in school performance, relationships, sense of self, and self-narrative.

Concept of Self-Disorders

- Maria Miceli & Cristiano Castelfranchi (December 2005) Anxiety, Stress, & Coping (Journal) "Anxiety as an 'Epistemic' Emotion: An Uncertainty Theory of Anxiety"
- Without a certain degree of stability and reliability of one's model of the world, including oneself, one faces the threat of succumbing to a serious destabilization of either one's conceptual system or personality structure."
- Rollo May (1950) The Meaning of Anxiety. Pathological anxiety can be tipped off by some threat to a value one "holds essential to his existence as a personality."

Disorders of the Self- Important Contributors

- **Margaret Mahler-** separation and individuation
- **Heinz Kohut–** particularly the concept of "selfobject," useful in delineating the ways in which others provide psychological functions necessary for one to maintain a sense of self-cohesion.
- **Stern-** infant research, psychoanalytic developmental theory
- **Anna Marie Weil–** "basic core"
- **Greenspan-** psychodynamic researcher, who includes a theory of cognition in his theory of development.
- **Jules Abrams–** Dynamic Developmental Interactionist Approach– We enter the world with a basic core– a genetic endowment and early pre-natal and perinatal experiences. Basically, one's personality results from the interaction between biology and the environment.

Disorders of the Self- Important Contributions/Neuropsychological

- Minimal brain dysfunction, perceptual handicaps
- Neurobehavioral disorders: learning disorders, learning disabilities, and neurological conditions.
- Pennington (1991) Diagnosing Learning Disorders

Disorders of the Self: Integration of the Neuropsychological with the Psychoanalytic

- **Alan Schore** (1994) Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development– Integration of psychological studies of critical interactive experiences that influence development of the social-emotional functions and neurobiological functions of the postnatally maturing brain.
- Conceptual challenge: to elucidate the interface between brain function and behavior in a way that is compatible with our psychological understanding of development (Palombo, page 22).

Explanatory Models

- Primary Nature: Behavioral Disinhibition (**Barkley**). Deficit in the capacity to delay responding to a stimulus. Diminished sensitivity to behavioral consequences, diminished control of behavior, poor rule-governed behavior.
- **Barkley (1998)** addition of executive dysfunction as a primary deficit. Pennington– AD/HD as a subgroup of disorders of executive function.
- **Barkley (1998)–** self-control and self-regulation as central core features. 4 sets: working memory; internalization of speech (verbal working memory); self-regulation of affect, motivation, arousal; and reconstitution. Failure to efficiently deploy: disruption in the motor control necessary for the execution of the task.
- Other: **Torgesen**- information processing; Levine- organizational failures /types; **Pennington**- working memory and demands for inhibition

Other Facts

- Prevalence (NIH) 3-5%. Gender differences = 3:1, per Barkley.
- Co-morbidity: Tannock & Brown (2000). 20-25% with specific learning disabilities.

Developmental History– What is commonly seen?

- Activity level
- **Segal** (1996) nature of the mothering experience
- Sleep patterns
- Greater resistance to conformity, less rewarding
- Lack of ability to get positive mirroring
- Need for more supervision and assistance.
- Lack of depth
- Clowning behavior
- Overstimulation/peers
- Other characteristics, fearless and aggressive; demanding; driven by a motor; accident prone; internalizing vs. externalizing symptoms; greater risk for substance abuse and antisocial behaviors.
- **Hallowell & Ratey**: restlessness, underachievement, procrastination, distractibility, blurting things out, flirting with danger, organizational difficulties, operating on multiple channels, hunger for stimulation, intolerance of boredom, low frustration tolerance, and verbal and behavioral impulsivity.
- Hyperfocus.
- Inability to experience feelings of contentment or a sense of internal regulation (Palombo, page 152). Neuroregulatory system.
- Executive Deficits– perhaps become more manifest later.

Sense of Self

- "The aspect of endowment involved in AD/HD is the neuroregulatory control system (self –control and self- regulation), which is part of the executive functions (Palombo, 1996a, p. 245). Because of the neuroregulatory deficits, the patient cannot adequately regulate thought processes, affect states, and/or behaviors. The child's responses are not congruent with the expectations of others in the context. Children with AD/HD are action-oriented and seldom given to introspection about their responses. They react before they have thought about their reactions and respond to others' responses before processing the meaning of those responses. From the child's subjective perspective, others misinterpret the motives behind his responses and perceive the behavior to be defiant, oppositional, or negativistic. The child's responses at first are not necessarily motivated by a desire to make life miserable for his caregivers. It is only after interactional patterns are established, in which the child expects to be misunderstood and is made anxious because of his failure to understand, that a vicious cycle of negativism is established. The child's frustration increases and eventually leads to rage or withdrawal.
- "The presenting symptoms vary depending on: the degree of hyperactivity, poor self-image, problems with parents, hypersensitivity, short attention span, inability to concentrate, low frustration tolerance, inability to follow directions, difficulties in school, and poor sibling and peer relationships. Deficits in regulatory functions are seen in negativism, poor self-soothing, poor impulse control, and proneness to overstimulation. Although the parents may try their best to compensate for the child's deficits, they are experienced as punitive and judgmental by the child. The resulting self-esteem problem leads to an underlying depressiveness, against which defenses are erected. The child feels he is bad and that closeness to others is not rewarding."

Sense of Self/Coherence of the Self-Narrative (AD/HD)

- Focus on the consequences of their actions rather than on their contribution to the situation they have created (Palombo, page 154).
- "I don't know why these things happen to me and never to anyone else." "I never wanted to hurt her feelings– she's just a crybaby!"
- Victims of circumstance, justify behavior by how treated by others, pride in aggression.
- "clash between the personal meanings they assign to events and the shared meanings the community confers upon them" (Palombo, page 154)

Sense of Self/Coherence of the Self-Narrative (Executive Dysfunction)

- **Eslinger** (1996)– Social Executor– social self-regulation, social self-awareness, social sensitivity, and social salience.
- Progression to high school– may be unable to avoid confronting the problem, beginning to experience anxiety and puzzlement about a lack of success.

Interventions

- Study Skills.
- 504 Plan.
- Assist the student in breaking down large projects into smaller and more logically ordered tasks; encourage him/her to carefully think through the steps involved in each project or task. Oftentimes, children who struggle with organizational problems have difficulty knowing where to begin or how to structure the process. It might be helpful to approach an organizational task with the student by asking about his/her goal and plan of approach and to provide appropriate guided support as needed.
- Present new material in a multi-modal format (e.g., oral instruction as well as diagrams and written explanations) and allow for hands-on experiences whenever possible. Provide ample opportunities for structured practice and repetition of new material as well as time for consolidation before a new subject is introduced, while also attempting to highlight the relevance and interesting aspects of the material. Teachers are encouraged to place a strong emphasis on paraphrasing and explaining why it is important to remember the newly taught information. After being exposed to new information, the student should be encouraged to paraphrase, summarize, or repeat in shorter form what s/he has just learned.
- Use teaching strategies that involve establishing eye contact during oral instruction, directly asking questions about material presented in class, and providing frequent progress checks during independent classroom activities. Make directions brief, using simple terms and a minimal number of steps. Be willing to reword or repeat directions/questions or to present them at a slower pace, making sure to emphasize the key words. Encourage the student to clarify unclear instructions before starting an assignment, to work slowly and carefully, and to check his/her own work before turning it in. Give him/her ample time to express his/her ideas but prompt him/her by asking specific questions that may guide him/her to offer an appropriate response.
- Since note taking is likely to be difficult, provide the student with copies of overhead teaching materials and/or teacher outlines from lecture-oriented classes.
- Whenever possible, provide the student with opportunities to re-do tests s/he has done poorly on or to complete extra assignments designed to improve lowered grades due to poor test scores. Such opportunities may have a positive impact upon his/her level of motivation, feelings of personal competence, and ability to persist on tasks and tolerate frustration.
- Analyze the best environment for test taking and completion of assignments. Oftentimes, individuals with attention problems benefit from having a quiet, relatively distraction-free, environment for completing exams/assignments, as long as the separate location is not viewed as punitive. Allow the student additional time to complete exams when needed.
- Consider that the student with AD/HD may need more frequent breaks from tasks requiring sustained mental effort and more frequent praise/reinforcement for behaving appropriately.
- Keep in mind that unexpected changes in routine may cause significant problems for AD/HD children, due to their tendency to easily become overwhelmed and their challenges in moving from one setting to another. Thus, advance warning may be helpful in allowing them to anticipate change and respond more appropriately. Try using verbal and visual cues to signal that there are just a few minutes before changing from one activity to another. Positively reinforce children for appropriately transitioning.
- AD/HD students often benefit from having a checklist of needed materials to review on a daily basis before leaving home for school and/or at the end of the school day. They also might benefit from having external tools for organization, such as backpacks, pencil cases, color-coding systems, and organizers.
- AD/HD students often have difficulty monitoring their output and recognize their own errors. It may be helpful to build in editing or reviewing as an integral part of every task in order to increase error recognition and correction. Verbal mediation can be a useful tool for helping AD/HD children direct their focus to their own behavior or work. They might benefit from talking through a task, since this approach can increase attention to the task and secondarily increase error recognition. Model, cue, and encourage the use of phrases, such as "What works?" and "What doesn't work?" as self-monitoring tools.

Interventions

The importance of psychotherapeutic intervention as a modality in the treatment of AD/HD is often underestimated. While medication management is considered to be an essential component of treatment, individual therapy, combined with parent support and education, is often integral to the overall strategy for treating individuals diagnosed with AD/HD. Children/adolescents with AD/HD are far more likely to develop co-existing problems and/or disorders than individuals who do not suffer from this disorder. Difficulties in academic and social-emotional functioning are common. There is an increased likelihood of disruptive behavior problems, anxiety, depression, and substance abuse among youth diagnosed with AD/HD. Once a comprehensive evaluation has determined the presence of AD/HD and other related disorders, individual psychotherapy can help the child or adolescent learn to understand the nature of his/her difficulties and develop the necessary coping skills in order to maximize adaptive functioning. Parent education and training, as well as family therapy approaches, should also be considered when behavioral or emotional problems that are commonly associated with AD/HD exist in the home/family environment. This type of assistance to parents typically includes instruction in behavior management techniques specific to the needs of the AD/HD child/adolescent.

Assessment and Interventions

- Test Battery.
- With regard to an AD/HD diagnosis, parents are encouraged to consider that treating AD/HD in children requires medical, educational, behavioral, and psychological interventions. According to ***CHADD*** *(Children and Adults with Attention-Deficit/Hyperactivity Disorder)*, the comprehensive approach to treatment is called "multi-modal" and consists of parent and child education about diagnosis and treatment, specific behavior management techniques, stimulant medication, and appropriate school programming and supports. Behavioral interventions are often a major component for children who have AD/HD. Important strategies include being consistent, using positive reinforcement, and teaching problem solving, communication, and self-advocacy skills. For school success, AD/HD children often require minor environmental adjustments in the classroom; some also require special educational services. For most AD/HD children, medication is an integral part of treatment. In a landmark study by the *National Institute of Mental Health* (1999), called the Multi-modal Treatment Study of Children with AD/HD (MTA) involving 579 AD/HD children over a 14-month period, the researchers concluded that children who received intensive medication management—either alone or in combination with behavior treatment—had more positive outcomes than children who received behavior therapy alone or community care.

Interventions

- Palombo: parents– positive reinforcement of acceptable behaviors and logical consequences for unacceptable behaviors.
- Individual psychotherapy– enhancing self-esteem, improving self-control, minimizing impulsivity, decreasing aggressiveness, and strengthening capacity for self-regulation.
- Depression may manifest differently.

Interventions

- **Barkley/Bronoski's** Model of Delayed Responding. 1) Disinhibition leads to a failure in prolongation (thinking before acting). 2) failure to separate feelings from facts. 3) failure to use self-directed speech or self-talk in achieving self-control. 4) failure to break apart and recombine information (analysis and synthesis).

Reading Materials for Children with Behavioral Dysfunction

- The Explosive Child (**Ross Greene**, 2001) and Treating Explosive Kids: The Collaborative Problem-Solving Approach by **Greene and Ablon** (2006).
- As Dr. Greene suggests in The Explosive Child, individuals who are disorganized and show poor impulse control often fail to anticipate social consequences and to make appropriate plans for action. They tend to become impulsively negative (i.e., saying "no" or otherwise negative remarks to all suggestions from others) and to show a reduced range of behaviors or rigidity. They often struggle to respond appropriately in complex or emotionally charged settings that require responsiveness to multiple sets of demands.

Reading Materials for Children with Behavioral Dysfunction (cont.)

Dr. Greene promotes the idea that "inflexibility + inflexibility = meltdown." In other words, when a child is being inflexible, a power struggle can easily ensue; in such a struggle, the adult too, can become inflexible, and together these attitudes facilitate a meltdown in the child. The ideas in Dr. Greene's book are based on the premise that inflexible children can easily bring out inflexibility or rigidity in adults, particularly when typical behavioral interventions are not successful. Dr. Greene also suggests that parents and teachers of "inflexible-explosive" children heed the point at which the child's behavior becomes incoherent and to read the behavior for just what it reflects in the child: momentary incoherence. Through this recognition, adults are encouraged to avoid reasoning with the child during a period of incoherence unless the inappropriate behavior is causing a safety risk, and therefore, an intervention is needed regardless of the potential for meltdown. Failing to brush his/her teeth or to be polite at the dinner table are not behaviors that should be placed in this category. Showing the child "who's boss" in such situations is not worth the probability of a major meltdown, especially since this is unlikely to reinforce the parent's position as an authority figure or to help the child become more flexible and able to handle frustration.

Reading Materials for Children with Behavioral Dysfunction (cont.)

- Dr. Greene suggests there are times and behaviors that call for teaching of frustration tolerance and flexibility, which he refers to as "skills." Behaviors in this category are important but should not be behaviors over which the parent is willing to induce a meltdown. As Dr. Greene notes, most "inflexible-explosive" children are quite limited in their ability to engage in the give-and-take behaviors needed to arrive at mutually satisfying solutions when two people disagree. Teaching the child negotiation skills involves modeling, practice, and the use of rewards. Other keys to teaching these skills are empathy for the child's position, an ability to invite the child to engage in mutual problem solving, and the willingness to organize and reframe the problem for the child in understandable terms. Dr. Greene encourages parents to be aware of their child's limitations in this process, to accept that there are behaviors to be ignored, and to realize that a short list of prioritized behaviors should be targeted for intervention.

Sensory Processing Dysfunction

Many AD/HD children struggle with sensory integration; i.e., a process that refers to the integration and interpretation of sensory stimulation from the environment by the brain. Impairments in sensory integration often produce varying degrees of problems in development, information processing, and behavior; children with these difficulties may be over-or-under-responsive to sensory input. Behaviorally, they may be impulsive and easily distractible, show a lack of planning and organization, and/or have difficulty adapting to new situations. Oftentimes, occupational therapists can provide very appropriate and helpful interventions for children with similar issues. Essentially, the goals of such treatment include finding means of providing the child with sensory information that can be organized internally, helping the child to become more aware of his own internal states and response to environmental stimuli, and assisting the child in developing methods of inhibiting/modulating sensory information.

A Personal Experience

Wanderlust

- A "gift" or strong tendency that I was born with is the desire to explore and challenge the unknown. In my youth this was extremely pronounced. Drove my mother crazy (pardon the pun). On multiple occasions she had to have the police out to search for me (this was in the 1950's). I never felt lost, but for some reason my mother became anxious if she could not find me--especially after dark.
- The lure of the unknown was like a powerful magnet to me. I was fearless and curious about everything. At the age of two (yes, two) I learned to stick the toes of my cowboy boots into the holes of our backyard three foot tall chain-link fence. I would climb up and then roll myself over the top; falling to the ground. Then I was off down the alley.
- At age three we had moved, but the new four foot chain-link fenced suffered a similar fate. Upon landing on the ground I would either pioneer the neighborhood being built or sneak over to the nearby farmer's yard and harass his chickens. I especially liked to lay on the wire roof of the chicken coop and watch the hens. He even put barbed wire on the roof, but I managed to find a way to still lay on it. He told my mother that his hens had not laid eggs since we moved there.
- This powerful drive to see what was on the far side of the hill has stayed with me. I dream of when my son and I go "deer camping." Hiking new territory that is unfamiliar is a great thrill for me.

A Personal Experience (cont.)

Feeling Different

- I always felt that I was somehow different than other kids. My parents were supportive, but didn't have a clue. I felt more at home with kids 3-4 years older. I played quite a bit with kids my own age, but never identified with them. In reflecting, I think in an off-beat manner I was bored. I longed for the excitement and stimulating challenge of keeping up with older kids intellectually. I was fearless. In playing football with older kids I would leap in to tackle them without a second thought. Problem was, I would embarrass them or act my chronological age. They did not like this and the result was me being push away or ruffed-up. I always fought back, but invariably failed to win the scrap or acceptance.
- This brings me to another point, at times my ability to feel pain could be limited. I remember when I was about six running run down a hill and purposely sliding hands first across a rock filled stream bed and not feel any hurt the first four or five times. When I did finally feel the pain, I felt like (but didn't) cry and immediately quit. I did other things like jump off of first story roofs and slide rump first down rough concrete embankments until my jeans were in shreds, but felt not pain. I was not numb, just no sense of hurting.
- When I got into fist fights, I did not feel hurt or pain. I remember being totally focused on defeating the opponent who was "bad." I never wore out or got tired to the point I would quit either. Perhaps this was a contest of a type for dominance or was it for emotional recognition?

A Personal Experience (cont.)

Academic Boredom

- I was a gifted child and my IQ tested at 130. Although I started out slow, I became a voracious reader. I read every science book and watched every science and technology show on TV including science fiction. I was profoundly gifted in what we now call systems analysis and theoretical physics. On my own I envisioned the 'flying tail' for aircraft.
- Unfortunately, my interests were never cultivated by the teachers. I never was asked to be part of the science club, etc. Likely this was due to their perception that I was trouble. Actually, I was very well behaved in the classroom. On the playground I was just demanding and to be candid, they loved most those kids who were seemingly invisible and demanded only slight effort on their part; this I was most definitely not. I crave their attention, encouragement and approval, but received at best toleration.
- Occasionally, I received from a well meaning individual something that was even worse than hostility-- pity. These people meant well, but clearly did not understand anything about me. The look in their eyes and the tone of their voice just devastated me. When I received 'the look' my self confidence melted and I retreated inward. I knew I was doing the 'right' thing and could stand up to a challenge from anyone, but pity was something quite different.