

East Side Union High School District Day 1

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Diagnostic Information

Old versus New Diagnostic Frameworks

(APA ,2013; Eppinger, Stewart, Motofsky, DiCicco-Bloom, & Maria, 2015; King, Veenstra-VanderWeele, & Lord,2013; Mahjouri & Lord, 2012; Ohashi, Mizuno, Miyachi, Asai, Imaeda, Saitoh, 2015;)

DSM-IV (APA-2000)

- 5 Subtypes under Pervasive Developmental Disorders
 - Autistic Disorder
 - **Asperger's Disorder**
 - Pervasive Developmental Disorder-NOS
 - **Rhett's Disorder**
 - Childhood Disintegrative Disorder

DSM-5 (APA, 2013)

- 1 Subtype of Autistic Disorder Distinguished by 3 Levels
 - Level 1-Requiring Support
 - Level 2-Requiring Substantial Support
 - Level 3-Requiring Very Substantial Support

Old versus New Diagnostic Frameworks

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DSM-IV (APA-2000)

- 3 Main Symptom Areas
 - A. Qualitative Impairment in Social Reciprocity
 - B. Qualitative impairments in communication
 - C. Restricted, repetitive and stereotyped patterns of behavior, interests, and activities
- Ambiguity in diagnosis categories

DSM-5 (APA, 2013)

- 2 Main Symptom Areas
 - A. Persistent deficits in social communication and social interaction across contexts
 - B. Restricted, repetitive patterns of behavior, interests, or activities
- List of restrictive/repetitive behaviors is expanded, and includes hypo- or hyper-sensory reactivity or interests.
- (Some reported problems with diagnosis of atypical or children who are described as higher functioning)

Diagnosis Overview

Other DSM-5 Change

(APA ,2013; Mahjouri & Lord,2012)

- Addition of Social (Pragmatic) Communication Disorder
 - Difficulties with social use of verbal and nonverbal communication leading to functional deficits
 - Restrictive/repetitive behaviors are not present currently OR in history
 - Must be careful to support this process for appropriate diagnosis



Restricted, repetitive patterns of behavior, interests, or activities (APA, 2013)

At least two:

- **Stereotyped or repetitive speech, motor movements, or use of objects**
- **Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change**
- **Highly restricted, fixated interests that are abnormal in intensity or focus**
- **Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment**



Social Communication

(APA, 2013)

- **Deficits in social-emotional reciprocity**
- **Deficits in nonverbal communicative behaviors used for social interaction**
- **Deficits in developing and maintaining relationships, appropriate to developmental level and beyond those with caregivers**

Neurobiology

What do we know?

(Dougherty, Evans, Myers, Moore, & Michael, 2016; Eppinger, Stewart, Motofsky, DiCicco-Bloom, & Maria, 2015; Pang, et al., 2016; Williams, 2012)

Problems with Genetic Code Development

Many genes involved; Many parts of the brain involved particularly frontal, anterior temporal, cerebellum

Brain Development Differences

Neuronal migration is disrupted; accelerated growth of white matter

Some Structural and Functional Differences

Different growth patterns; increased columns with smaller cell bodies

Cognitive and Neurological Differences

Language areas not well synchronized; less connections; reading at lower cortical level

Behavior Differences

The effects of autism are occurring before behavior is seen; the way brain responds to environment is altered; early detection so important

Cognitive Characteristics

Theory of Mind, Executive Functioning, Central Coherence



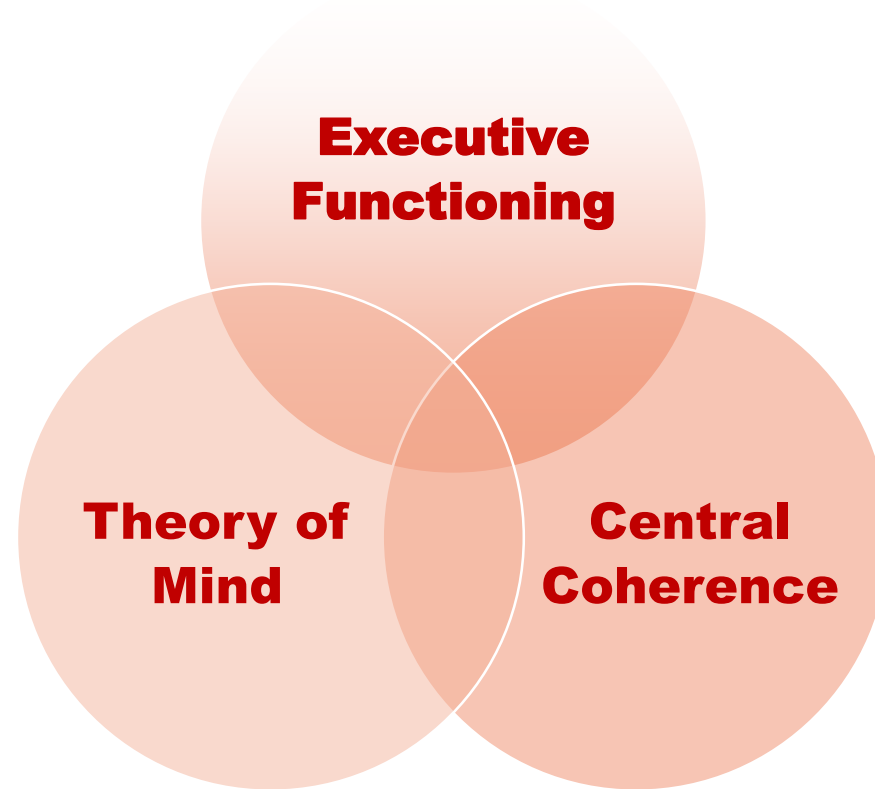
A thought to get us started

Although I was not able to make my first total sentence till my teens, and that on a keyboard, the safe and coherent language of the written word was with me from an early age. This started as the other girls [her sisters] brought home simple reading from schools. I must have been very young because I think I could understand some of the words in Jenny's [one of her sisters] very first reader, and she started school when I was two and a half.. A picture of a ball and the four letters that were below it came together in a completely synchronized way, but I know that until I was a lot older I never connected those symbols with the huggable plastic sphere I could hold in my hands. I never developed the urge to follow a written or symbolic instruction, and I never became automatic at speaking a written word. So no one knew I could read. At that stage I would not have seen any point in showing that I could. *

*(Blackman, 1999 cited in Mirenda, 2003)

Cognitive Characteristics that may challenge Academic and Social Performance

(Sterboni, Kirby, & Shankey, 2015 ; Zein, Solis, Vaughn, McCulley, 2013)



Theory of Mind

Social Perspective Taking

(Theory of Mind; Social Cognition; Mind Reading; Mentalizing)

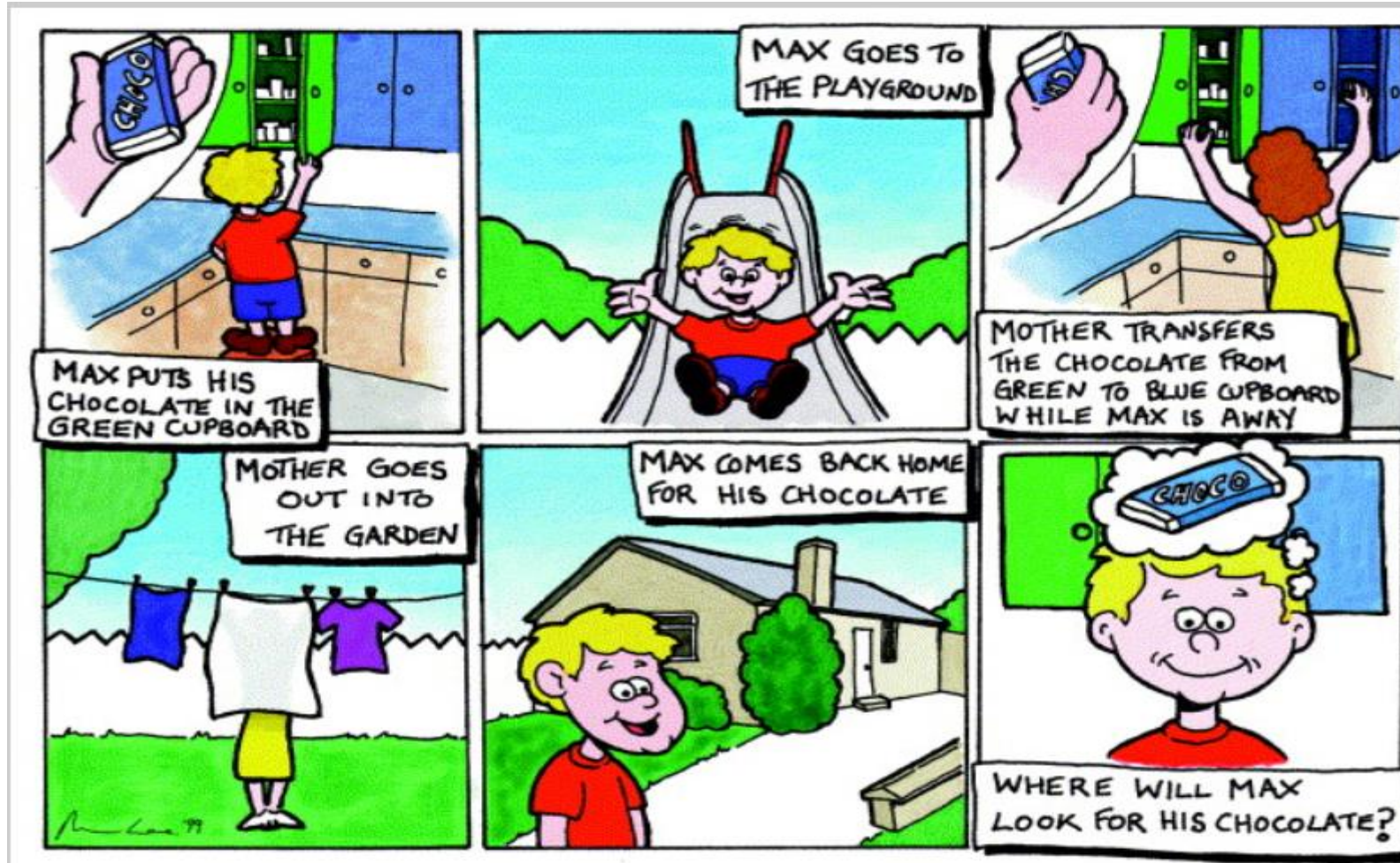
- **The ability to know that other people have different perspectives than one's own**

- **Taking turns**
- **Pretend Play**
- **Keeping secrets**
- **Role playing**



- **Humor**
- **Sarcasm**
- **Making predictions**
- **Making inferences**
- **Remorse**

Variation on Sally-Ann Task



Theory of Mind



- **Constructs (Baron-Cohen, 2011; Westby 2014)**
 - **Cognitive ToM**
 - **Thoughts, beliefs and the intentions of others**
 - **Affective ToM**
 - **Thinking about and experiencing the emotions of others**
 - **Interpersonal/Intrapersonal (Westby, 2014)**
 - **Differentiates between understanding of self and others**

Thinking about ToM

1. Write down verbs that may go with cognitive versus affective
2. Watch clip and jot down what kind of ToM challenges you notice in Sheldon

Cognitive (Involving thoughts and beliefs)

Affective (Involving emotions)

Interpersonal (Involving self)

Intrapersonal (Involving others)

Impacts of Social Perspective Taking

- **Influences in almost everything especially:**
- **Conversational Exchanges**
 - **Inferencing involving perspective**
 - **Reflective listening**
 - **Clarification and repair**
- **Difficulty with certain text genre because of inferencing and social understanding requirements**
 - **Narratives may be harder than more factual expository genres**
 - **Trouble with persuasive arguments, debating, genre requiring multiple perspectives**
 - **Some suggestion that comprehension differs according to content perspective (White, Hill, Happé, & Frith, 2009)**

Theory of Mind and Academics

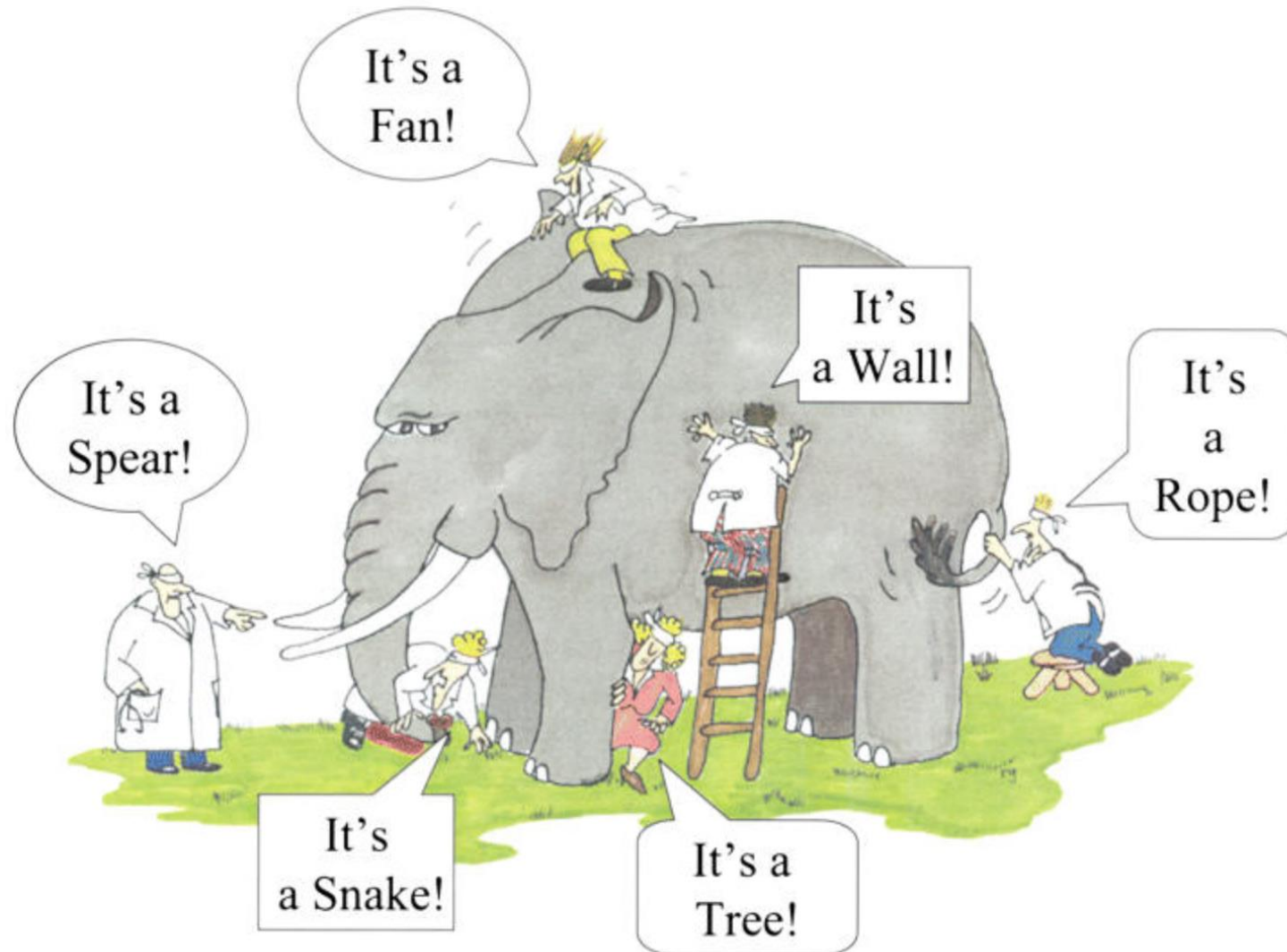
- **Reading comprehension is highly related to oral language but...**
- **Norbury and Nation (2011) suggested that factors specific to the ASD diagnosis could have factor on reading performance**
 - **Inability of children with ASD to focus on global meaning**
 - **The inability to suppress irrelevant information could be influencing this finding**
- **“Word recognition, oral language, and social impairments may all constrain reading comprehension in ASD” (Ricketts, Jones, Happe’, & Charman, 2013)**
- **Measures of social behavior and social cognition (Autism Diagnostic Observation Schedule-Generic; ADOS-G; Lord et al., 2000/ Strange Stories; Happe, 1994; Frith-Happe’ animations) predicted reading comprehension after controlling for variance explained by word recognition and oral language**

Theory of Mind and Academics: Areas of Concern

- **Difficulty with character perspective**
- **Difficulty discerning important versus unimportant details**
- **Difficulty understanding what may be important or unimportant in a story related to character goals**
- **Difficulty with certain text genre because of inferencing and social understanding requirements**
 - **Narratives may be harder than more factual expository genres**
 - **Trouble with persuasive arguments, debating, genre requiring multiple perspectives**
- **Some suggestion that comprehension differs according to content perspective and experience (White, Hill, Happe, & Frith, 2009)**

Central Coherence

Focus on Parts



Central Coherence

- **The term is originally proposed by Frith (1989)**
- **“The natural human tendency to draw together several pieces of information to construct higher-level meaning in context” (Frith & Happé, 1994)**
- **Refers to the ability to form meaningful links across stimuli and to generalize over a wide range of contexts (Aljunied & Frederickson, 2011)**
- **Important to consider both parts of central coherence (1) global perception/meaning and (2) contextual sensitivity (Vermeulen, 2015)**

Central Coherence (Continued)

- **It is hypothesized that children with ASD focus on parts rather than the whole.**
 - **Tasks involving information that is local is easier than those tasks that require connections of global knowledge or connections between different stimuli in context (Happe', 2000)**
 - **Posited to result in hyperfocusing, stimulus-overselectivity, poor text comprehension (Aljunied & Frederickson, 2011)**

Central Coherence (Continued)

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 - **Controversy about CC theory and ASD. Some studies showed that people with autism could process globally (Valla & Belmonte, 2013). Explanations include:**
 - **People with autism need to be asked to process globally but do not do it automatically (Mottron et al., 1999; Rinehart et al., 2000)**
 - **Suggested that successful participants had high general intellectual ability**
 - **Focus was on the global knowledge or connections but did not include the context (Vermeulen, 2015)**

Central Coherence: Relationship to Language

- **The meaning of words is derived from the context (i.e., Getting to “work” is highly dependent on context)**
- **Children with ASD often literally translate language rather than using context to support meaning; therefore figurative language is difficult**
- **Pragmatic challenges in children with ASD are often because of the lack of context consideration**
- **Children with ASD are less efficient in determining meaning when there is semantic ambiguity (Norbury, 2005) or syntactic uncertainty (Jolliffe & Baron-Cohen, 2000)**

Central Coherence



Central Coherence and Academics

(Cain, 2010; Perfetti et al., 2005)

- **Understanding the gist or main idea**
- **Understand semantic use of ambiguous words according to context**
- **Understanding application of learned abilities**
- **Integrate information from different sources to form a whole**
- **Generalization of information**

MAKING CONNECTIONS

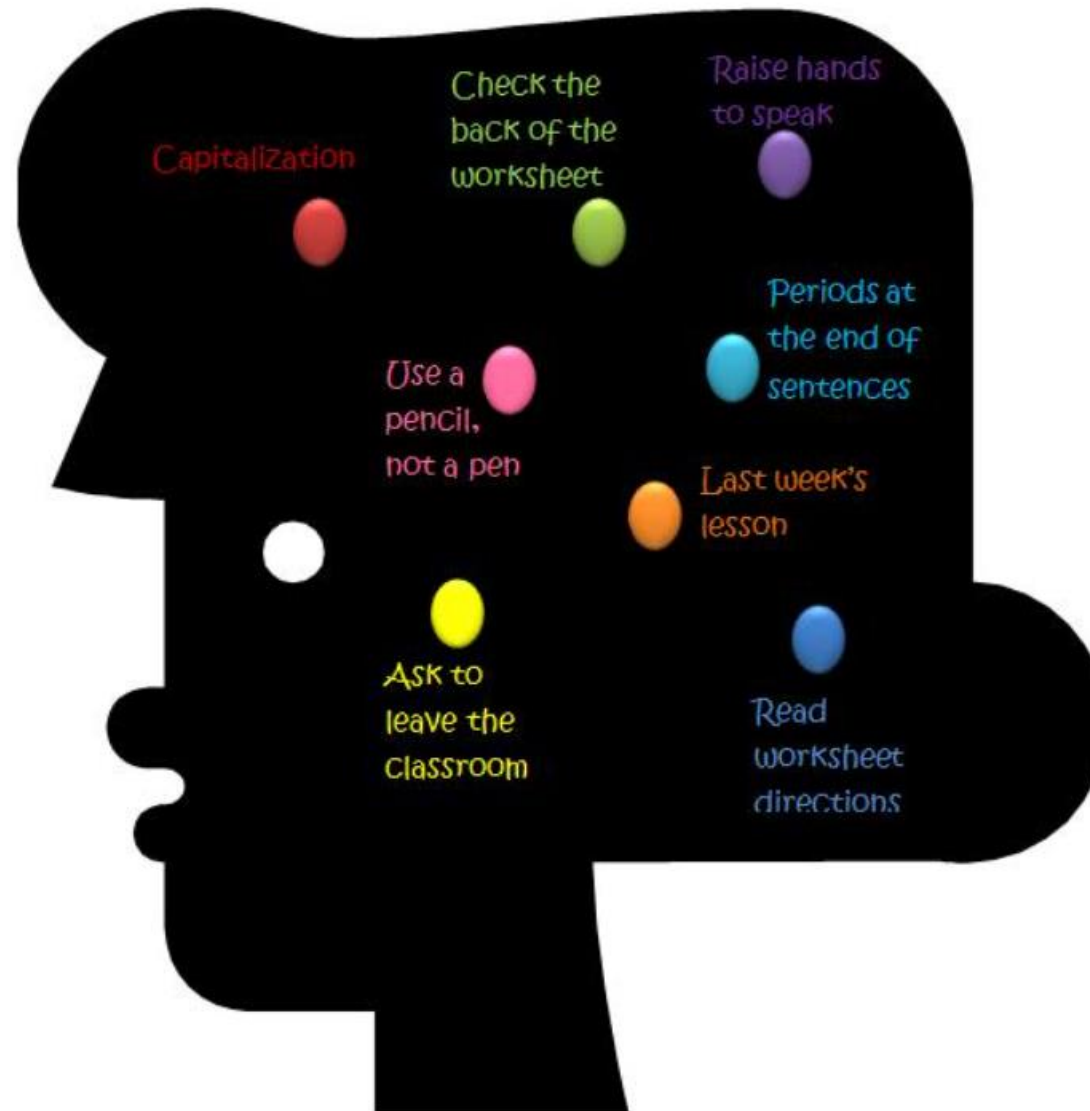
- **THREE CONNECTIONS (Text to Self; Text to Text; Text to World)**

Reminds me of something in my life	Have I read a book that relates to this book?	How does it relate to the world?
I used to sing ‘Old MacDonald’s Farm” and “Itsy Bitsy Spider”	I read a comic book about Spiderman.	Spiders live in most places. They really like humid places. I saw this on a PBS special.



Executive Functioning

Executive Functioning: CEO of the brain



Executive Function: Definition

(Hughes, 2011; Joseph & Tager-Flusburg, 2004; Pelicano, 2009)

- **Very broad term that incorporates the higher order processes that tap behavioral regulation and metacognition such as:**
 - **Suppress responses (Response inhibition)***
 - **Selective attention* (Attending to most important occurrences in environment)**
 - **Working memory* (Manipulating information online)**
 - **Flexibility * (Changing cognitive strategies)**
 - **Emotional control (Self-regulation)**
 - **Plan/organize (Planning ahead)**
 - **Monitor (Checking one's behavior/language)**
- **These abilities govern goal-directed action and adaptive responses to novel or complex situations**
- ***Related to development of Social Perspective Taking**

Examples of Executive Functioning Tasks

Luria's Hand Game

- Imitation
 - Make a fist
 - Point a finger
- Opposite
 - Make a fist
 - Point a finger



INHIBITING

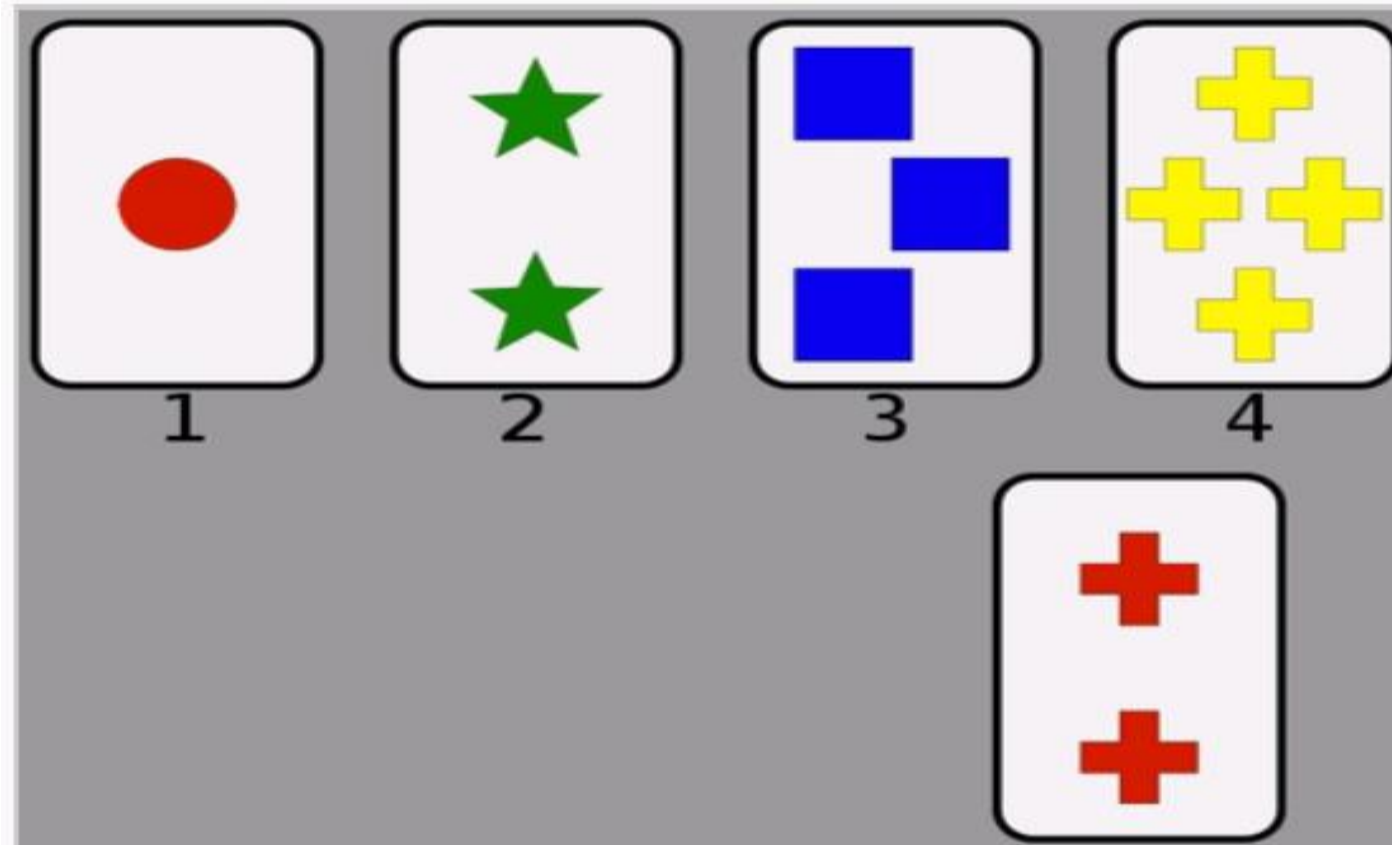
Examples of Executive Functioning Tasks

- Say this number
- Now say it backwards

Working Memory

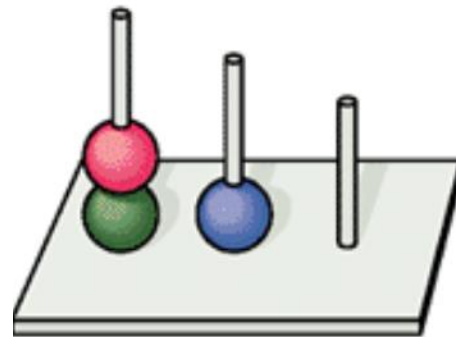
Examples of Executive Functioning Tasks

**Depending
on
feedback
can sort
by:
Color
Shape
Number**

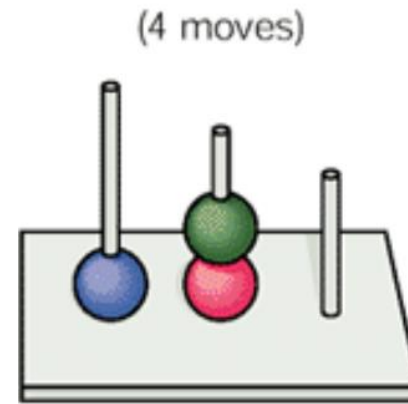


Flexibility

Examples of Executive Functioning Tasks



Initial position



Goal position

PLANNING

Communication Areas and Selected Areas of Executive Function

- **Response inhibition- Interrupting; Saying inappropriate things; using body instead of verbal means to request of protest**
- **Selective attention-Ability to focus on speaker; to recognize what's important; continue focus for appropriate period of time**
- **Flexibility- Transitions; topic maintenance; repair; clarification**
- **Plan/organize- Asking for help; Ability to plan and execute conversations, essays etc.; process information from multiple resources and integrate new ones (with flexibility)**
- **Monitoring ability- Self Management**

Executive Functioning and Language

- **Postulated that use of language facilitates EF (Bishop, Nation & Patterson, 2014 Gooch, Hulme, Nash, & Snowling, 2013; Jacques, Brocki, & Zelazo, 2009)**
- **Conversely, EF deficits found with language impairment (Gooch et al., 2013; Wittke, Spaulding & Schechtman, 2013)**
- **Several theories why:**
 - **Good attentional skills facilitate language learning (Bishop, Nation & Patterson, 2014)**
 - **Verbal mediation helps with EF tasks (Barley, 1977)**
 - **Genetic risk factors impacting neuronal migration or comorbidity factors (Gooch, Thompson, Nash, Snowling, & Hulme, 2016)**

Executive Function and Academics

(Cartwright, Marshall, Dandy, & Isaac, 2010; Jarrold, Mansergh, & Whiting, 2010, Meltzer, 2007)

- **Some suggest that difficulty with executive functioning highly interactive with development of social perspective issues**
- **May focus on the act of decoding and not connect reading with meaning**
- **Flexibility in connecting meaning**
- **Self monitoring and self correction**
- **Repair**

CHAOS + CHAOS=?



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