

**Differential Diagnoses of Attention Disorders:
Behavioral Manifestations and Confusions**

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NEW PARADIGM

Language / executive continuum provides a better understanding of Attention Deficit Hyperactivity Disorder, Autistic Spectrum Disorder, Specific Language Disorder (Aphasia), Organizational disorders

Interplay of cognitive / metacognitive, self-regulatory, social / emotional functions best describes the continuum of disorders

Executive disorders are primary disorders of adaptation, whereas “learning disorders” are secondary disorders of academic functions.

The “silent” frontal brain “begins to speak” in the late 1980’s.

POSTERIOR / BASAL FUNCTIONAL SYSTEMS

DRIVE

SEQUENCING

ATTENTION	VISUAL-SPATIAL	AUTONOMIC	MEMORY	SENSORY	LANGUAGE	COGNITION
ALERTNESS		EMOTIONAL		PERCEPTION		MOTOR

BEHAVIOR

Various organized integrated fixed functional systems hypothesized to be based, in relation to the frontal lobes, in more posterior / basal regions.

Stuss & Benson, 1986

FRONTAL FUNCTIONAL SYSTEMS

DRIVE

SEQUENCING

ATTENTION	VISUAL-SPATIAL	AUTONOMIC	MEMORY	SENSORY	LANGUAGE	COGNITION
ALERTNESS		EMOTIONAL		PERCEPTION		MOTOR

BEHAVIOR

Sequencing and drive, two functions closely allied with the frontal lobes, appear to have a superordinate role in the posterior / basal functional systems.

Stuss & Benson, 1986

Executive functions are the behavioral manifestations of frontal brain activity.

EXECUTIVE DISORDERS:

Focal / Diffuse TBI

Epilepsy

Meningitis

Malignancies

Heavy lead burden

Fetal Alcohol Syndrome

Very low birth weight

PKU

Developmental brain anomalies

Attention Deficit Disorder

Autistic Spectrum Disorder

**Language is necessary for self-communication
(thinking), interpersonal communication,
concept formation & learning.**

ASPECTS OF LANGUAGE

Auditory Processing

- **Acoustic signal**
- **Phonological awareness**
- **Phonological sequencing**
- **Phonological memory**

ASPECTS OF LANGUAGE

Language Comprehension

Vocabulary

Connected Speech

Length

Context

Concepts

Vocal intonation / inflection

Accents / alternate pronunciation form

ASPECTS OF LANGUAGE

Language Comprehension

Linguistic Structures:

Common word relations

Grammatical morphemes

Elaborated constructions

Length

Question forms

Imbedded sentences

Conjoined sentences

ASPECTS OF LANGUAGE

Language Expression

Vocabulary

Selection

Retrieval

Ideation

ASPECTS OF LANGUAGE

Language Expression

Formulation

Length

Complexity

Temporal references

Grammatical morphemes

Question forms

Negation

Metacognitive expression

Discourse

Pragmatics

ASPECTS OF LANGUAGE

Language Expression

Speech and Voice

Repetition

Articulation

Prosody / inflection

Fluency

Voice Quality

Focal frontal brain injury in 19 – 31 month olds → delayed vocabulary & expressive grammar (Bates in Broman & Fletcher)

Working memory improves with age

- **Speed of information processing**
- **Increased inhibition**
- **Chunking information**
- **Verbal rehearsal**

REORGANIZATION OF ADHD CRITERIA FROM DSM-IV

Inattention Problems:

- **Attention to details**
- **Sustained attention**
- **Distracted by external stimuli**

Hyperactivity Problems:

- **Fidgets / squirms**

REORGANIZATION OF ADHD CRITERIA FROM DSM-IV

Self-Regulation Problems:

- **Listening to direct communication**
- **Follow-through / task completion**
- **Sustained mental effort**
- **Out of seat**
- **Restless / runs, climbs**
- **“On the go” / “Driven by a motor”**
- **Talks excessively**
- **Blurts out before question completed**
- **Waiting / turn taking**

REORGANIZATION OF ADHD CRITERIA FROM DSM-IV

Metacognitive Problems:

- **Organization**
- **Loses things**
- **Forgetful**

REORGANIZATION OF ADHD CRITERIA FROM DSM-IV

Social Problems:

- **Playing quietly**
- **Talks excessively**
- **Blurts out**
- **Interrupts / intrudes**

REORGANIZATION OF ASD CRITERIA FROM DSM-IV

Self-Regulation Problems:

- **Preoccupation / restricted interest**
- **Inflexibility re: routines / rituals**
- **Stereotypical & repetitive mannerisms**
- **Reactivity to environmental stimuli**
- **Initiate / sustain communication**

REORGANIZATION OF ASD CRITERIA FROM DSM-IV

Metacognitive Problems:

- **Preoccupation with parts**
- **Difficulty with generalizations**
- **Narrowed range of interests**
- **Symbolic or imaginative play**

REORGANIZATION OF ASD CRITERIA FROM DSM-IV

Social Problems:

- **Non-verbal behavior re: social interaction**
- **Peer relationships**
- **Shared enjoyment / interests**
- **Social / emotional reciprocity**
- **Pragmatics**

LANGUAGE / EXECUTIVE CONNECTION

Comprehension: Literal and Concrete

- **Nuance of meaning**
- **Figurative language**
- **Jokes, puns**
- **Multiple word meanings**
- **Grammatical phrases**

LANGUAGE / EXECUTIVE CONNECTION

Expression

- **Verbose with content limited**
- **Vocabulary restricted or idiosyncratic**
- **Word selection unusual**
- **Inability to summarize**
- **Verb tense usage**

Executive / Language Continuum Components:

- **Self-regulation**
- **Metacognition**
- **Social / emotional interaction**
- **Language**