THE RDI PROGRAM

Constructing Partnerships to develop neurally integrated brains & minds

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RDI INTERVENTION

WHAT WHILL HELP ME KEEP YOUR ATTENTION TODAY?

OVERVIEW OF DAY

- Discussion of Core Deficits
- Static vs. Dynamic Learning
- Communication Development in Autism
- Specific Strategies to Use at Home
- RDI Format
- Questions

WHAT IS AUTISM?

- **A Neurodevelopment Disorder**
- **A brain that Functions Differently**
- **Cognitive Perceptual Disorder.**
- **Faulty Information Processing Systems**
- **Reliance on Sameness/Static System**

WHY RDI

A GOOD PLACE TO START IS WITH BRAIN DEVELOPMENT

The unconnected brain

- **At birth, our brains are like a room filled with computers**
  - **Each computer has a powerful, specialized task**
  - **But the computers are not networked together**

The Unconnected Brain

- **Our Brain's grow from experiences**
- **It is an experience dependent organ**
- **But only when presented with the right type of experience**
- **Our brain must be presented with mental challenges – to grown neural networks across areas**

Guided Participation

- **We guide our child's experiences to support neuro-development.**
- **This guiding is called Parenting**
- **Parents use daily activities as a backdrop for inserting productive mental challenges**
- **It is an intuitive process**

Guided Participation Relationship – Failured loop of interaction between parent and child

- **In Neurodevelopmental Disorders the brain is underconductive. The child is born with neural vulnerabilities that are so great, they disrupt the natural process**
- **Lack of Feedback**
- **the failure of a robust interaction Loop is common to all children with Autism, Asperger's Syndrome and Pervasive Developmental Disorder**

PARENTS ADAPT TO CHILD VULABILITY

- **NAME SOME WAYS YOU ADAPTED**

Without the GPR, discrete brain functions may be all that develop

- **Their brains crave predictability**
  - Accumulating facts (rote learning)
  - Memorizing & carrying out procedures & scripts (tying your shoes, math calculations, using formulas)
  - Complying with prompts & following rules (compliance)
  - Disconnected speech (not integrated with other communication channels, emotions, thinking or other experiences)

Multiple Perspectives

- **See if you can focus on the wonderful use of color and texture in this painting**

Catastrophic Results of Poor Neuroconnectivity

- **Disconnected from your past and future –**
  No reflection no future tense
- **Disconnected from others:**
  communication breaks down and requires repair
- **Disconnection between emotions & thought:**
  Emotions are experienced like a unpredictable, powerful earthquakes, rather than critical tools in problem solving and decision making

Quality of Life

Name of Study	#	Employed	Independent Living	Relationship
ASA 2008	2,321	5%	3%	1%
NAS 2004	217	12%	4%	1%
Farnley 2003	13	8%	0%	?
Engstrom 2001	18	6%	0%	1%

Failure to develop neural integration results in

- **SD adults with average or High IQ's**
- **Only 12% find any employment**
- **Only 3% live independently**
- **Real friendship & marriage is even rarer**

Autism Core Deficits

What Deficits to you see in your child?

INTERSUBJECTIVITY

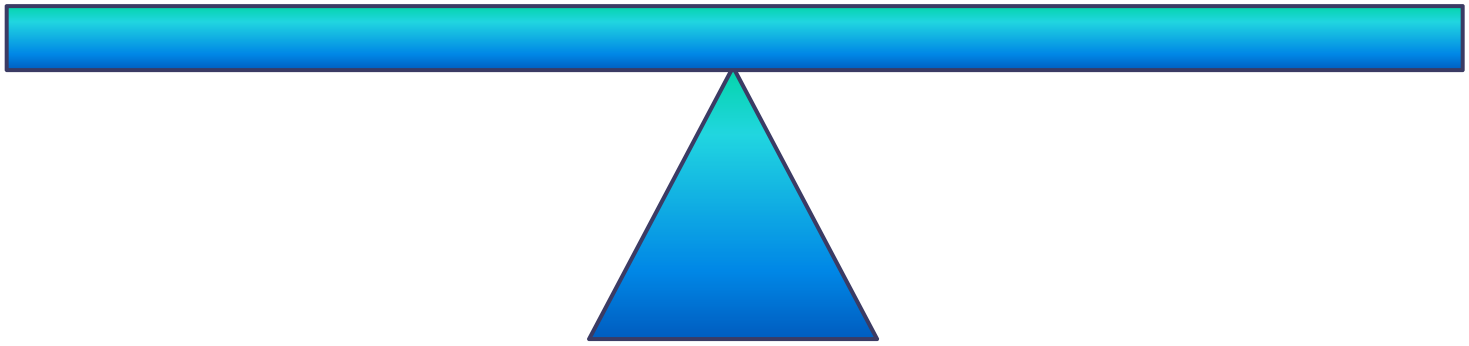
- **INTER** -- Between two or more people
- **SUBJECTIVE** -- belonging to, proceeding from, or relating to the mind of the thinking person

What do You think we should do?

- **Compensatory Strategies?**
  - To make up for, offset error, outweigh
- **Remediation Strategies?**
  - The act or process of correcting a deficiency so that it no longer constitutes an obstacle
- **Do Both?**

REMEDIATION

- **WE CAN MOVE TOWARDS QUALITY OF LIFE BY BALANCING REMEDIATION BETWEEN DYANAMIC AND STATIC INTERVENTIONS**

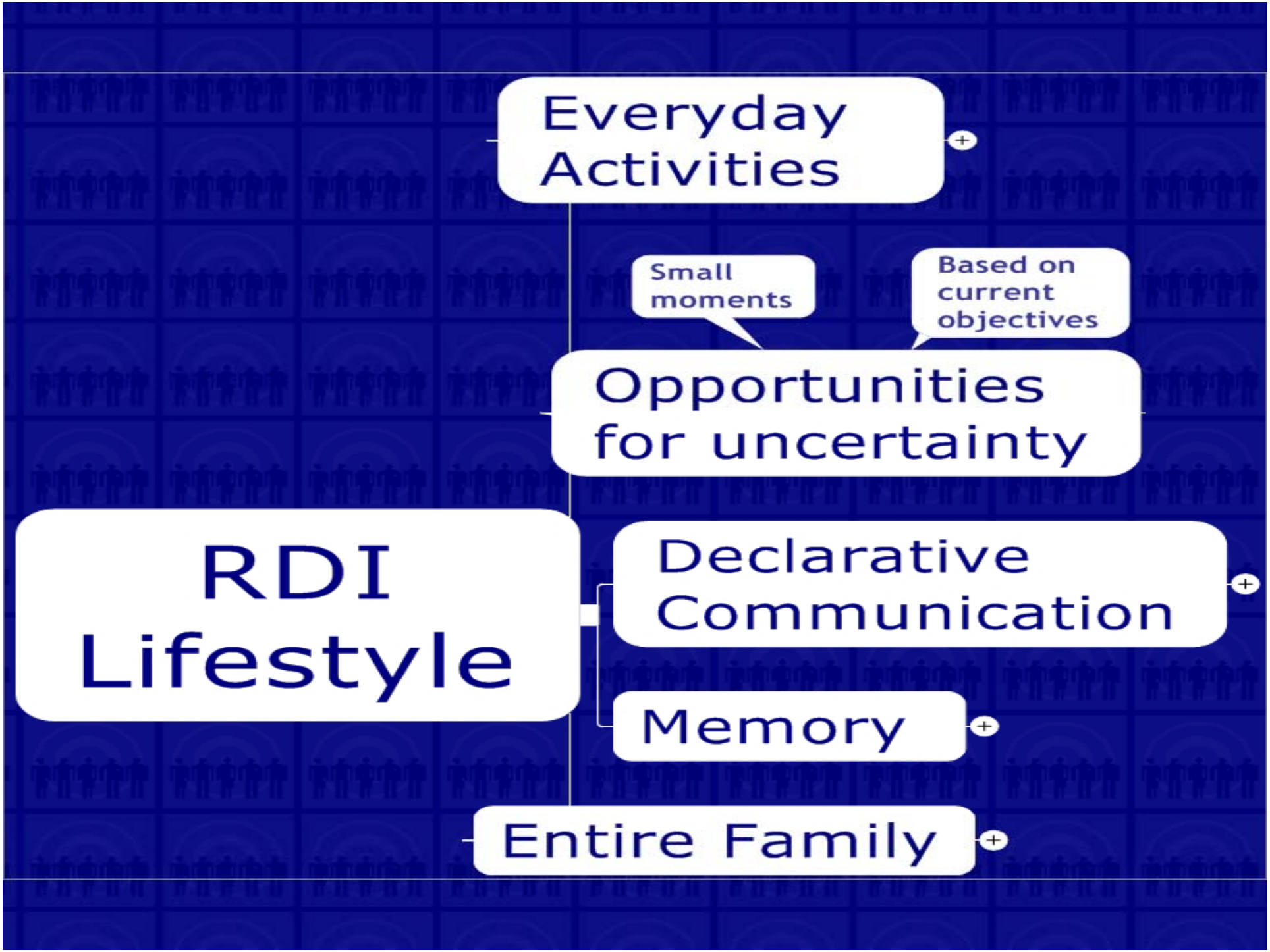


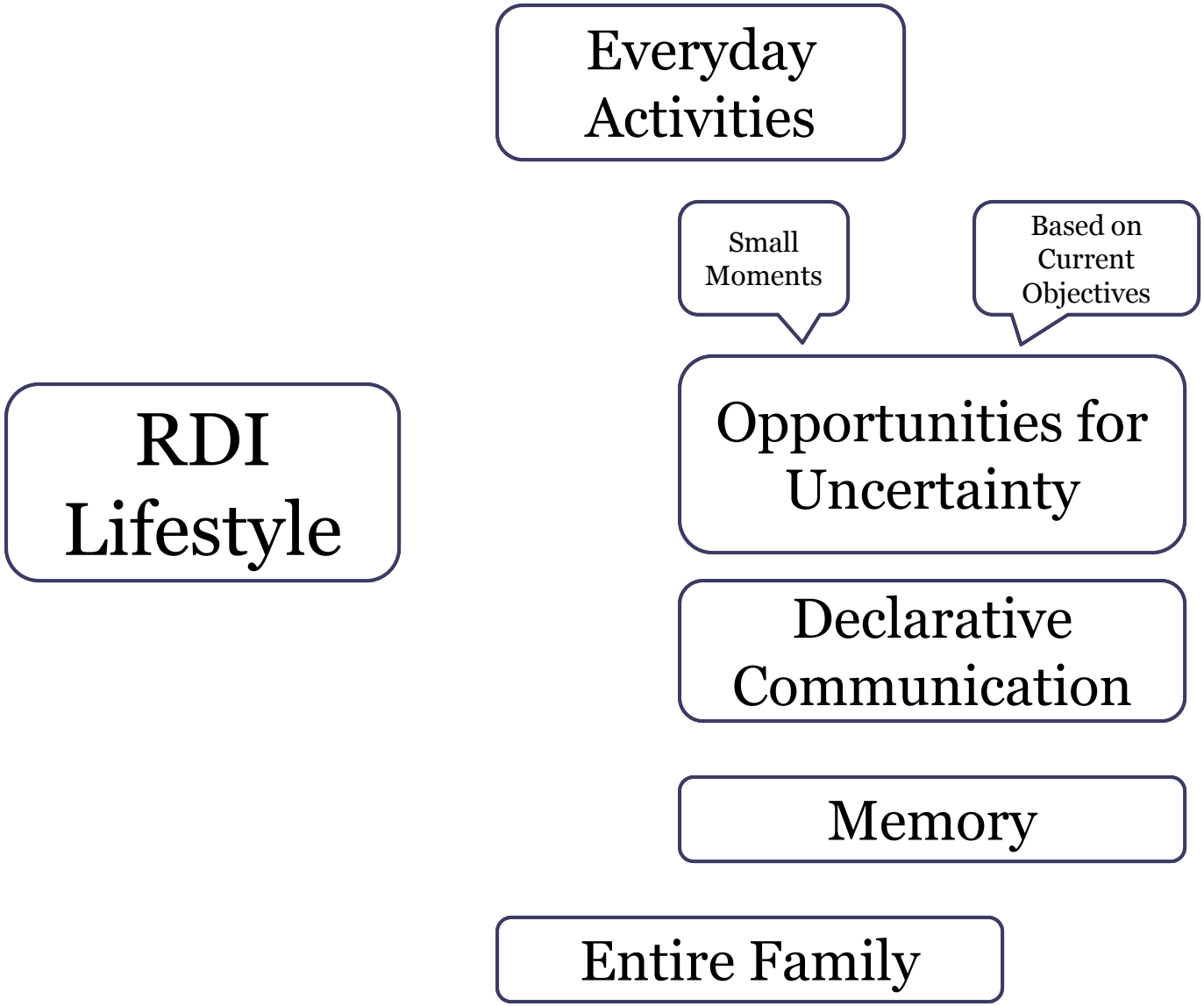
We can raise the bar

- **The good news is that scientists now believe that the integration of the brain can change throughout life**
- **We can provide a second chance for those who, through no fault of their own left the pathway of neural integration**
- **Parents can regain their natural role and prepare their children for the realities of 21st century life**

What is RDI?

- **Teaching** comfort and Success
  in Dynamic Systems
  through support of Neural Integration


RDI Lifestyle
Everyday Activities
Small moments
Based on current objectives
Opportunities for uncertainty
Declarative Communication
Memory
Entire Family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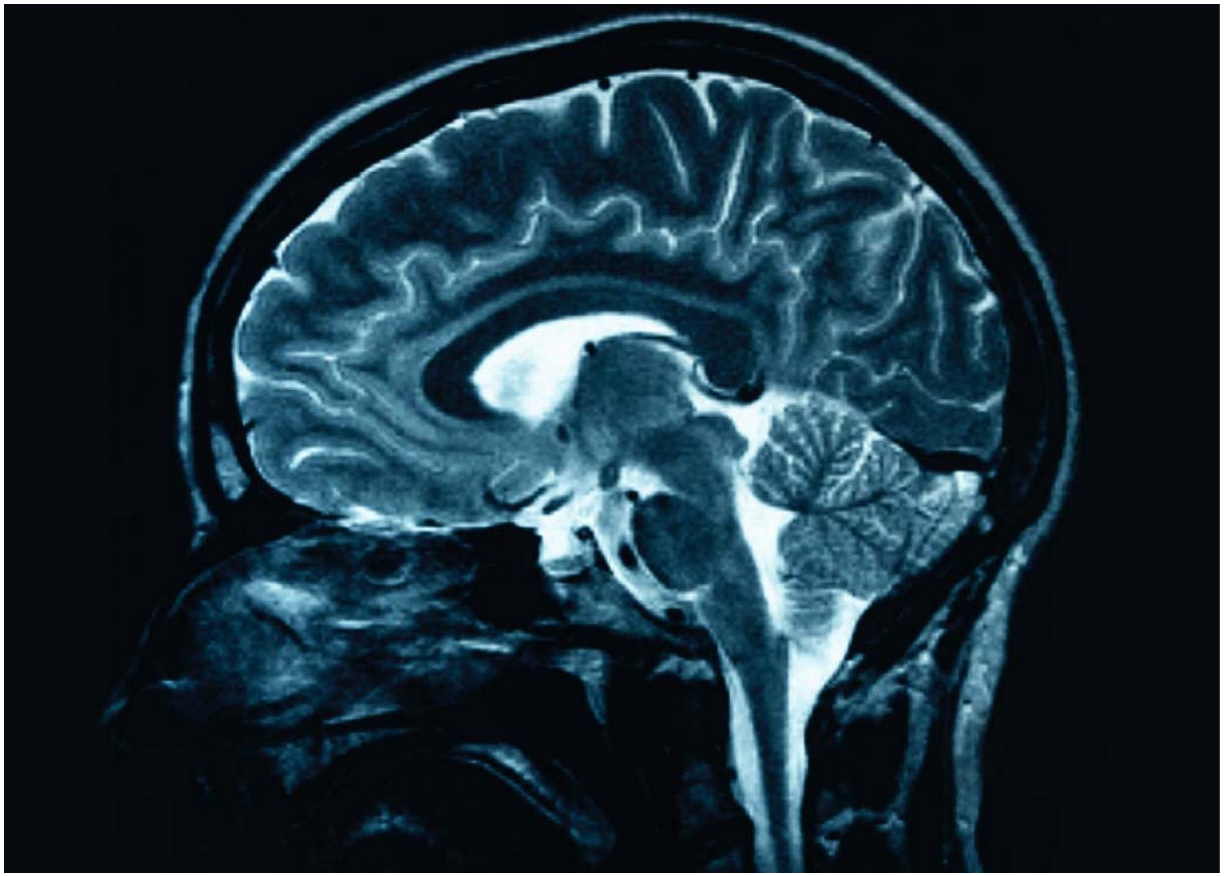
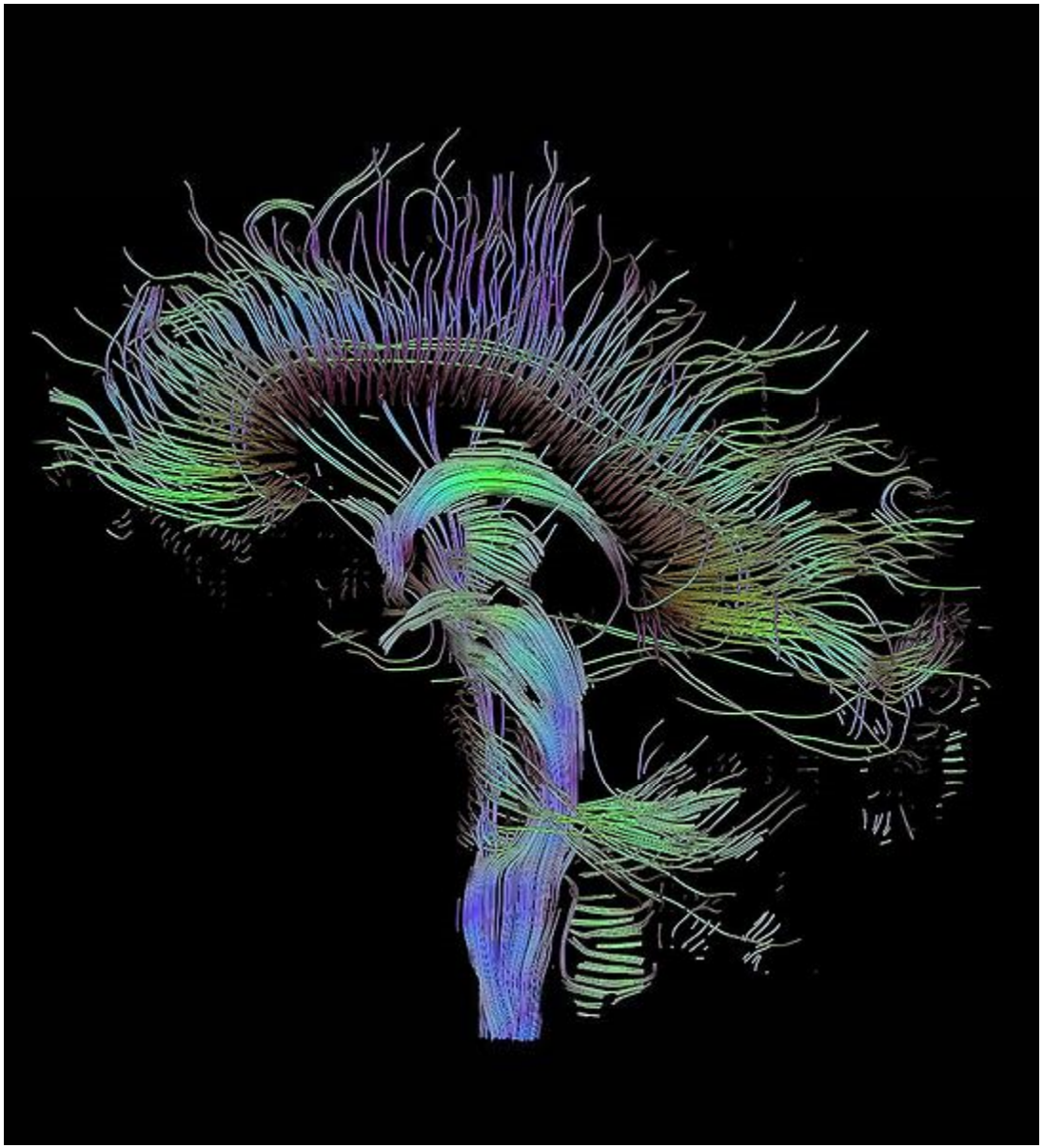
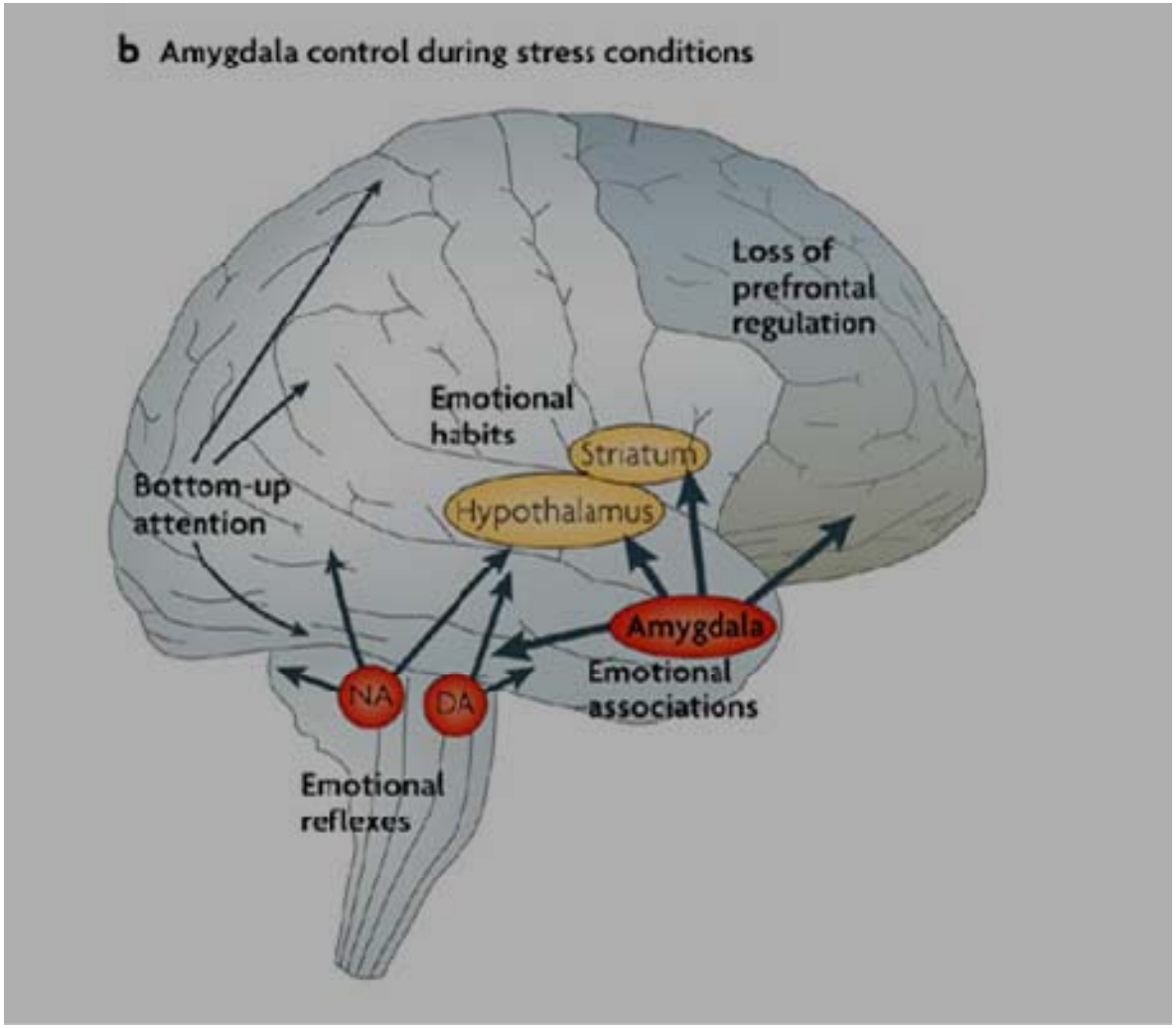
NEUROANATOMY DON'T PANIC!





Picture of PreFrontal cortex



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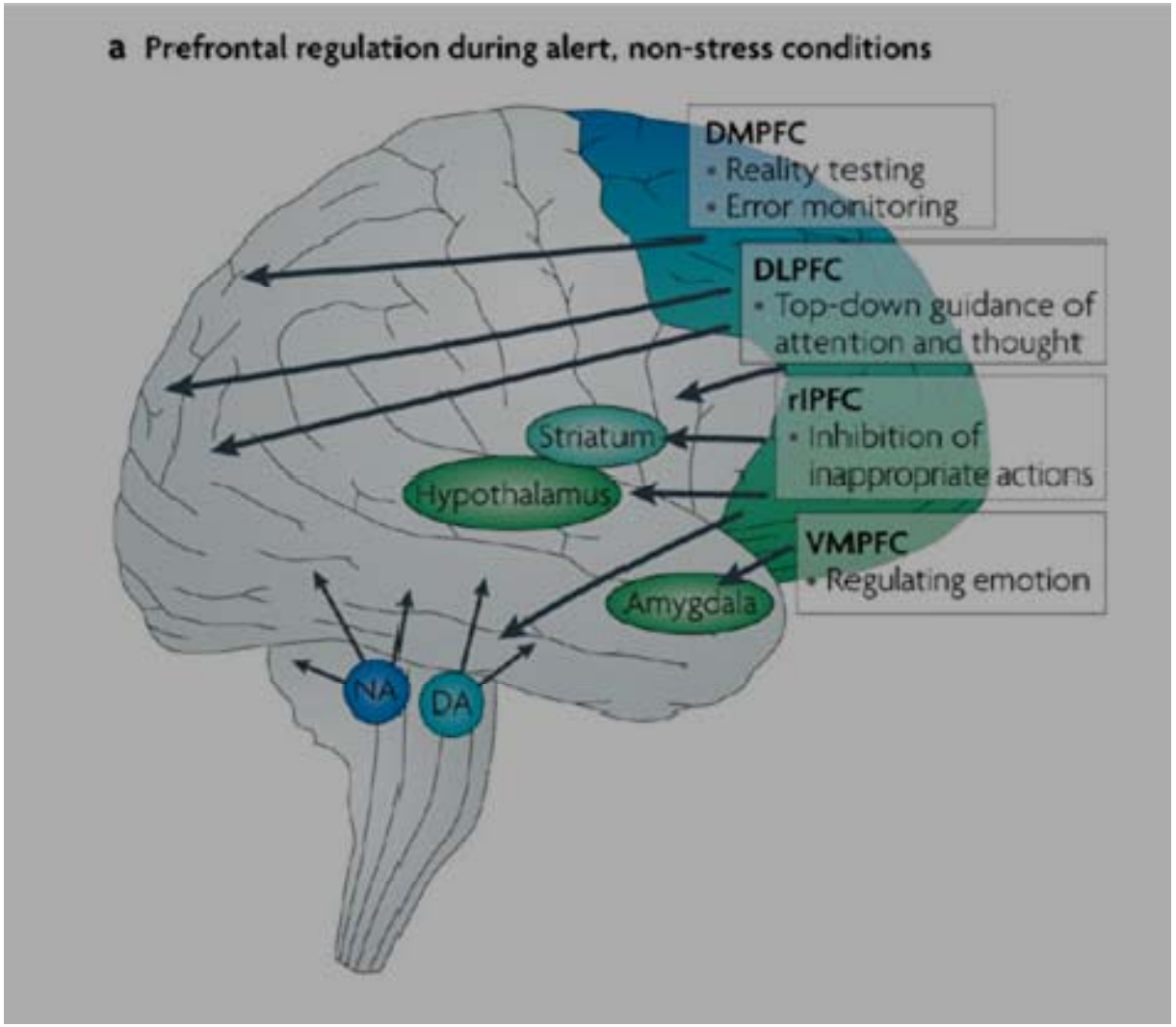
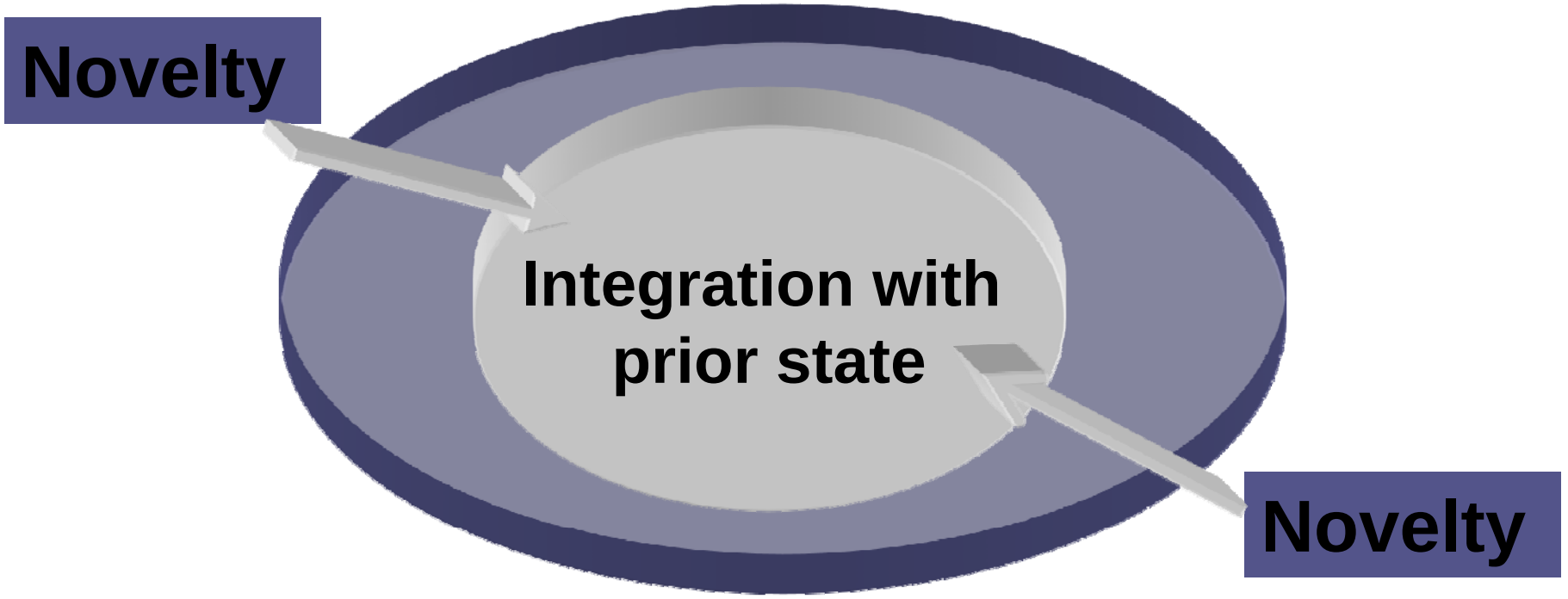


Dynamic Systems are regulatory-based

- System members contribute novelty, as long as all members can integrate it with prior system state



Regulation

Parent Regulation **Co-regulation**

Self-Regulation **Collaboration**

Forms of Co-Regulation

- Pulling a string just hard enough to play back-and-forth but not so hard as to pull it out of your partner's hands
- Adjusting the loudness of your drumming, to match your partner when he/she becomes a little softer
- Throwing a ball softer when you notice your partner is having trouble catching it
- Slowing down to remain side-by-side with your partner while walking
- Quickly going to help your partner lift and carry a beanbag chair when you see it is heavy for them
- Repeating yourself when you see your partner did not hear you the first time

COMMUNICATION IN AUTISM

- **BROAD BAND COMMUNICATION**
- **NONVERBAL DOMAINS OF COMMUNICATION**
- **DEVELOPMENT OF THE PREFRONTAL CORTEX**

Evaluative Praise
20% Success

- Good Job!
- You're so clever
  - Awesome
- That's a beautiful picture

Descriptive Praise
90% Success

- I noticed that.....
- Your arm went up but you didn't hit
- You remembered...

Communication

- **An important aspect of this idea is that communication is a continuous and dynamic process, rather than the exchange of discrete information.**

Dynamic Communication

BROADBAND

Integrating and processing many incoming stimuli through several brain processing centers which work collaboratively to determine complex levels of meaning

Ex. Voice tone, facial gaze, prosody, gestures, body orientation, pitch, words

Two Functions of Communication

Declarative/Sharing

- Sharing emotional reactions
- Comparing/contrasting attributes
- Reminiscing together
- Planning future experiences
- Affirming your emotional bond
- Increasing coordination
- Repairing misunderstandings

Manipulative

- Obtaining desired objects or information
- Influencing someone to provide a specific response
- Reciting scripted words in response to an associated setting
- Cueing to obtain a response
- Testing knowledge
- Demonstrating knowledge

Descriptive

- I'm gonna get you!
- We're walking
- I am so tired.
- Look, there's a giant spider!
- Watch out!
- Here I come.
- I hope that the truck gets here soon
- Something is going to happen.

Manipulative

- Pick that up.
- Which one do you want?
- What did you do today?
- What color is this?
- Stop that.
- Get dressed right now!
- Look at me.

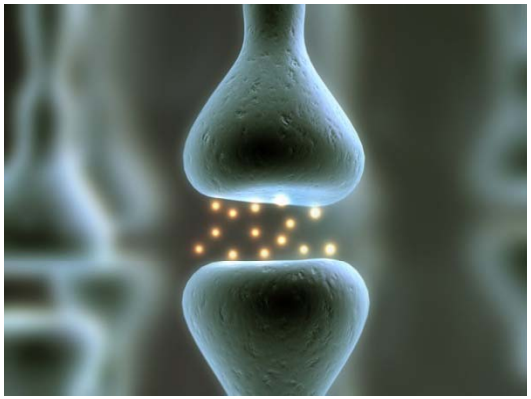
Growing the Prefrontal Cortex

- **Type of Talk**
- **Self-Talk** ***(Barkley 2002)***
- **Defining right hemisphere thoughts/feelings and pictures**
- **Thinking about the future**

Neuroanatomy

Dopamine Loop

- **Chemical that helps activate the prefrontal cortex**
- **Provides us with a feeling of satisfaction**
- **Dopamine can be increased in various ways**



Increasing Dopamine

- **IT IS POSSIBLE TO INCREASE THE LEVEL OF DOPAMINE IN THE BRAIN THROUGH SELF-TALK, MEDITATION AND INCREASED LANGUAGE SKILLS**

Electrophysiological correlates of proto-declarative pointing.

Henderson et al., Neuroscience, 2002

- **Examined the longitudinal relationships between power data in 2 bands of electrical activity in the brain for 27 *infants* at 14 mo of age, as measured by background electroencephalograms (EEG), with proto-declarative and proto-imperative pointing at 18 mo, as measured by the Early Social *Communication* Scales.**

PROTO-DECLARATIVE POINTING

- **RESULTS:**
- **Revealed significant correlations between log-transformed power in the frontal region at 14 mo and proto-declarative, but not proto-imperative, pointing.**

- ***Henderson et al., Neuroscience, 2002***

Communication to Intelligence

PARITIAL/FRONTAL INTERGRATION THEORY"

- **Intelligence is developed through strong neural networks**
- **contingent communication develops neural connectivity**
- ***Preceding of the National Academy of Science CalTech Feb. 2010***

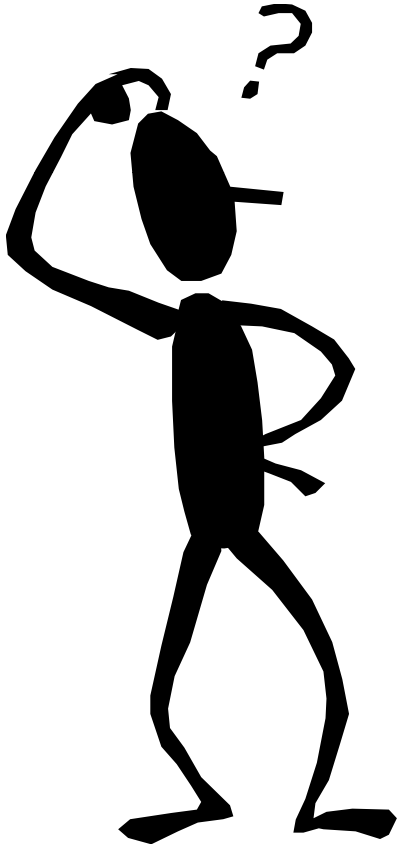
COMMUNICATION

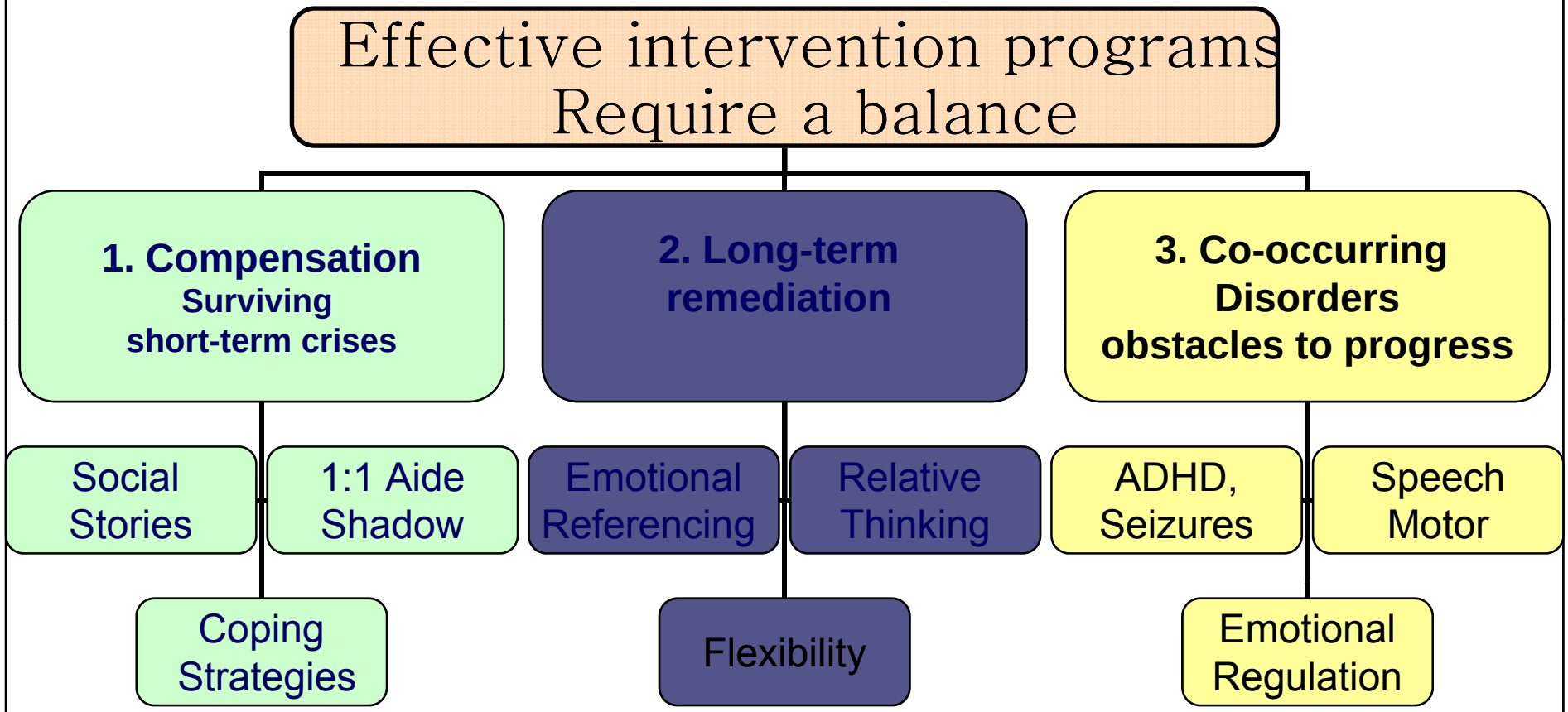
Communication is a product of what we are thinking and feeling in relation to what our partners think & feel

Elizabeth Bates, 1997

Descriptive Style

- **Children's language skills and vocabulary increase 10 fold with this style**
- **Builds neuropathways**
- **Multi-Channel Broadband width**
- **"Uncertainity" and guessing**
- **Concept of Time past and future**




Effective intervention programs
Require a balance
1. Compensation
Surviving
short-term crises
2. Long-term
remediation
3. Co-occurring
Disorders
obstacles to progress
Social
Stories
1:1 Aide
Shadow
Emotional
Referencing
Relative
Thinking
ADHD,
Seizures
Speech
Motor
Coping
Strategies
Flexibility
Emotional
Regulation