

Unstuck and On Target: Improving Executive Function, On-Task and Flexible Behavior

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I receive royalties for sale of *Unstuck*
manuals and BRIEF forms.

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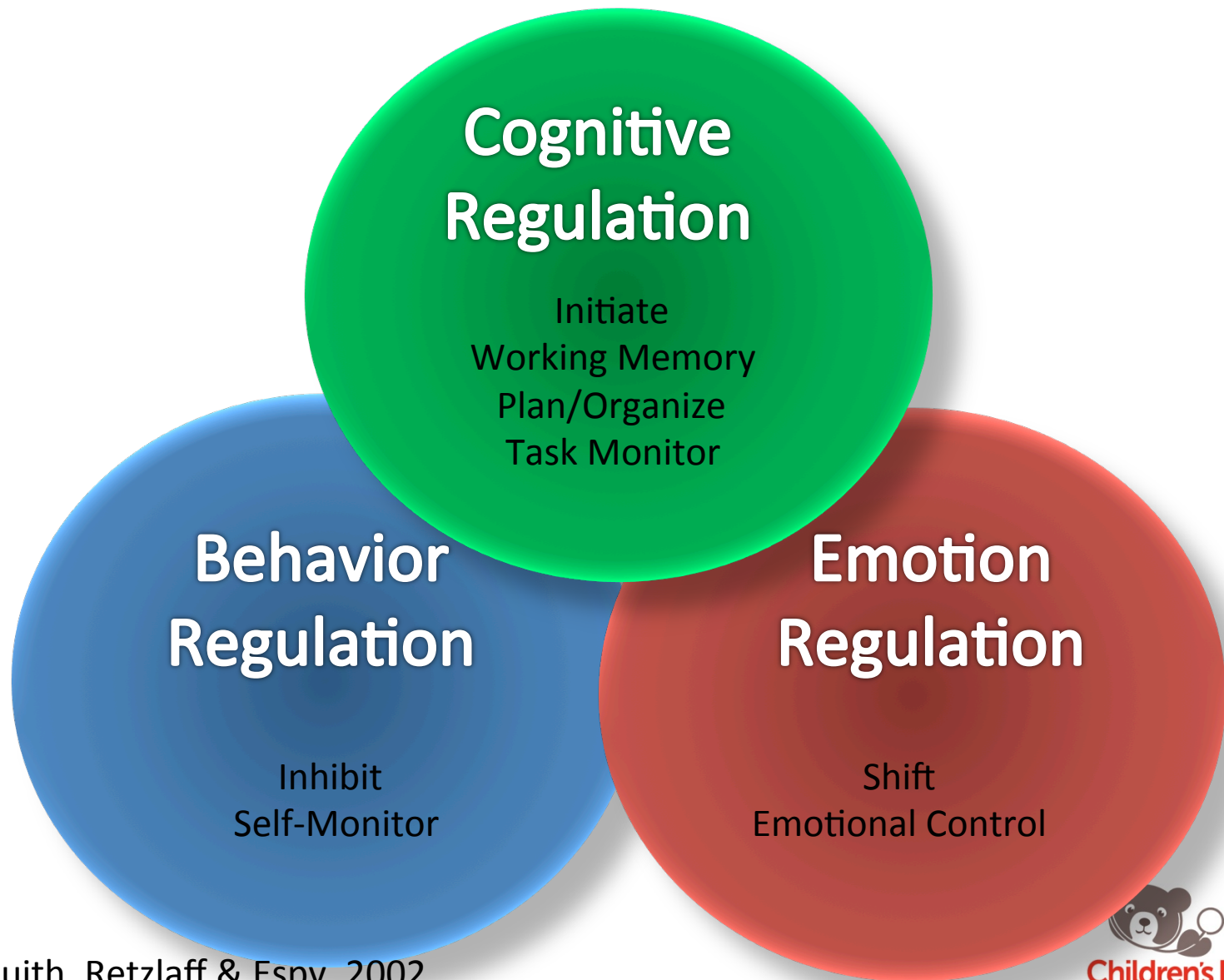
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GOAL: Increase your understanding of executive functions and how to enhance them

PLAN

1. Define Executive Functions (EF) & why they matter for outcomes
2. Understand & accommodate EF deficits:
 - a. Flexibility
 - b. Organization/Integration
 - c. Working Memory
3. Teach flexibility, organization & planning skills

Three Factor Model of Executive Function



Executive Dysfunction (Teuber, 1964): “The curious dissociation between knowing & doing”

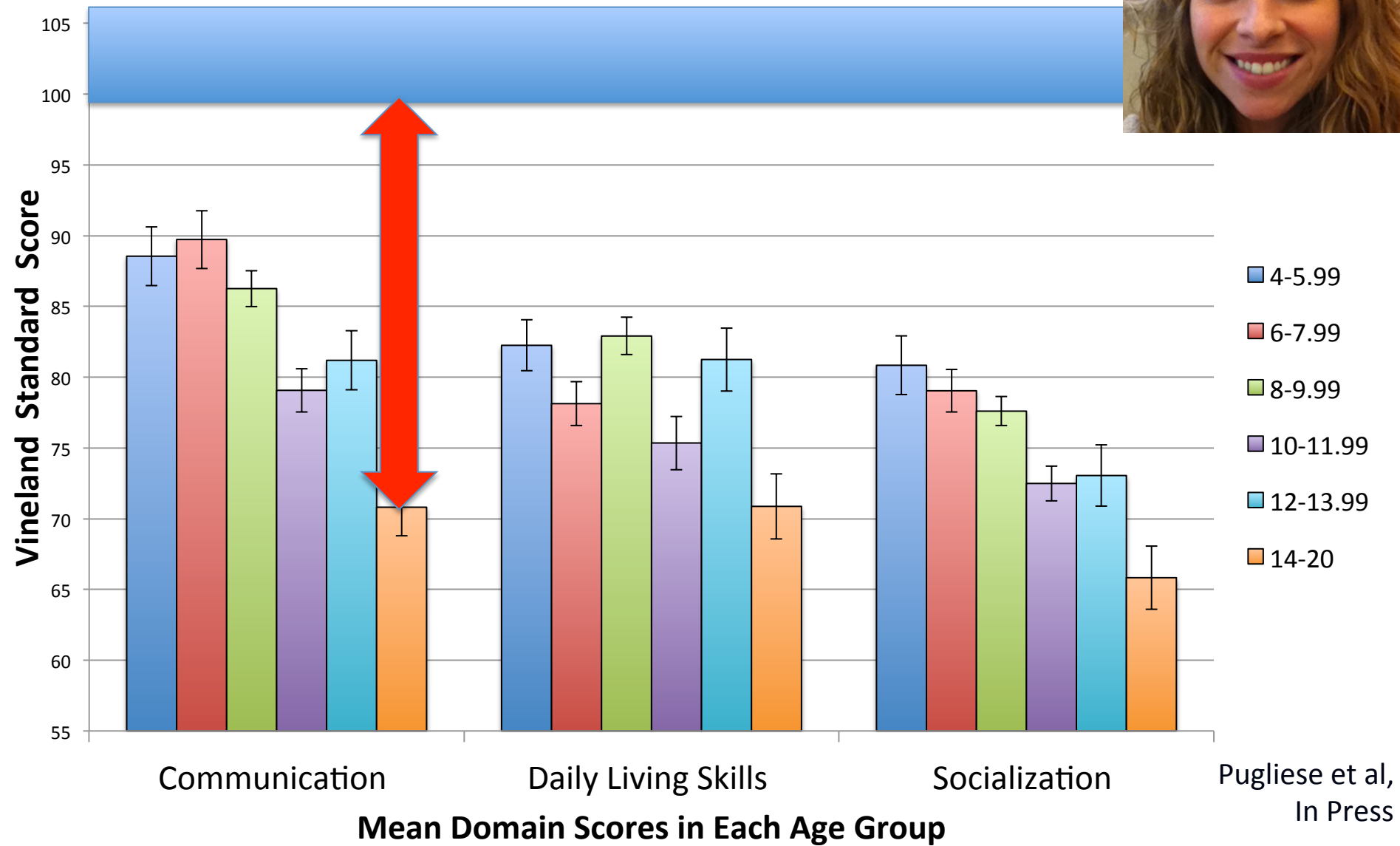
EF problems relate to:

- Learning
- Adaptive daily living skills (Lopata et al, 2012, Gilotty et al, 2002)
- Family stress (Lounds, 2007)
- Adult outcomes (Hume et al, 2009)



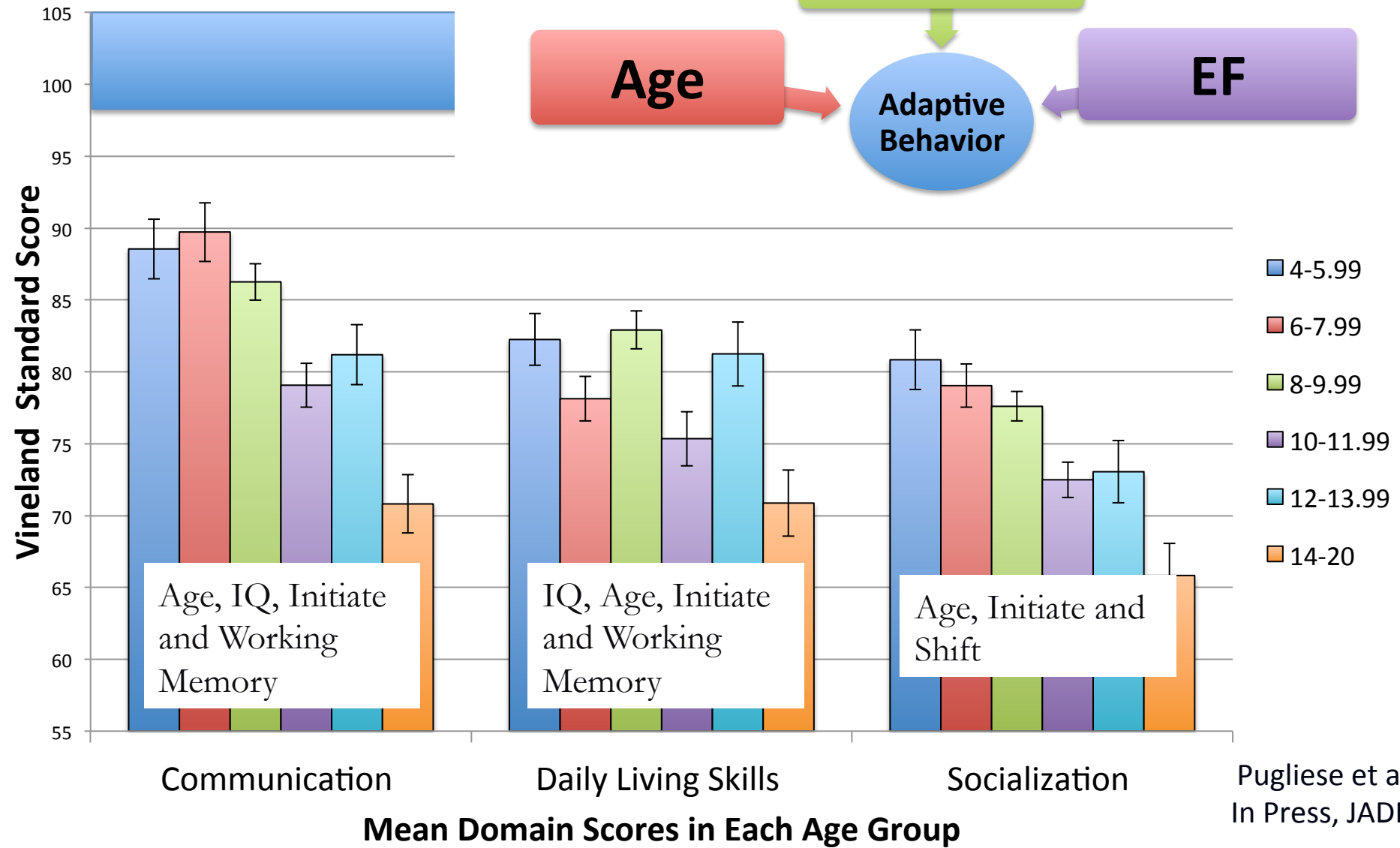
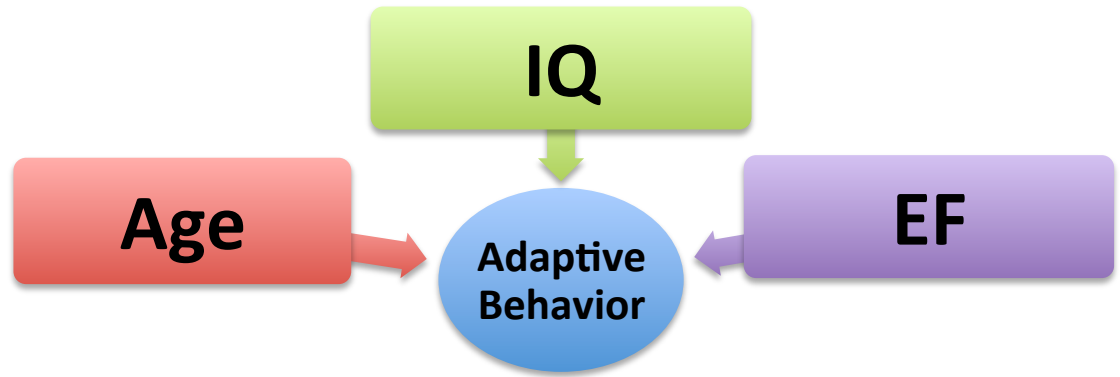
Adaptive Skills by Age Group

(ASD n=421; Mean IQ =103)



Adaptive Skills by Age Group

(ASD n=327)



Looks Like *Won't*...

Could be *Can't*

Oppositional, Stubborn

Difficulty shifting
Avoiding overload

Can do it if he wants to

Difficulty shifting
Lack of salience

Self Centered

Impaired social cognition
Poor self monitoring

Won't put good ideas on
paper

Poor fine motor
Disorganization

Sloppy, erratic

Poor self monitoring
Overloaded

Won't control outbursts

Overloaded
Disinhibition

Doesn't care what others
think

Impaired social cognition
Poor self monitoring

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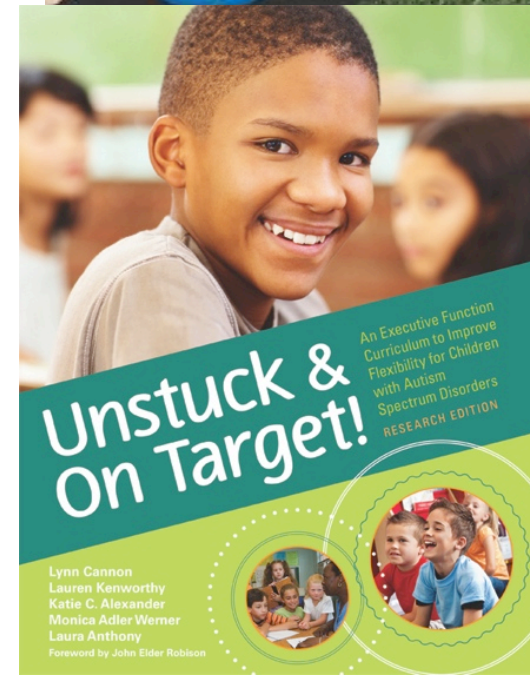
Unstuck Team

Ivymount Model Asperger Program/Take2 Summer Camp

- Katie Alexander
- Lynn Cannon
- Monica Werner

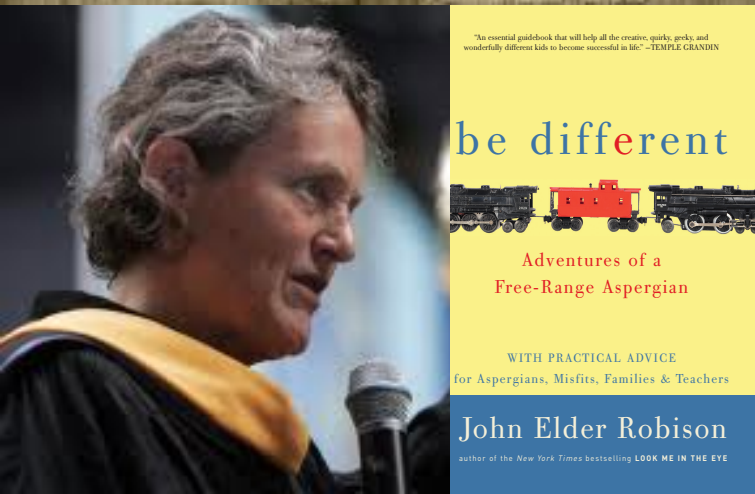
Children's National Center for Autism Spectrum Disorders

- Laura Anthony
- Lauren Kenworthy
- John Strang
- Cara Pugliese



Unstuck Philosophy: Accommodate, then Remediate

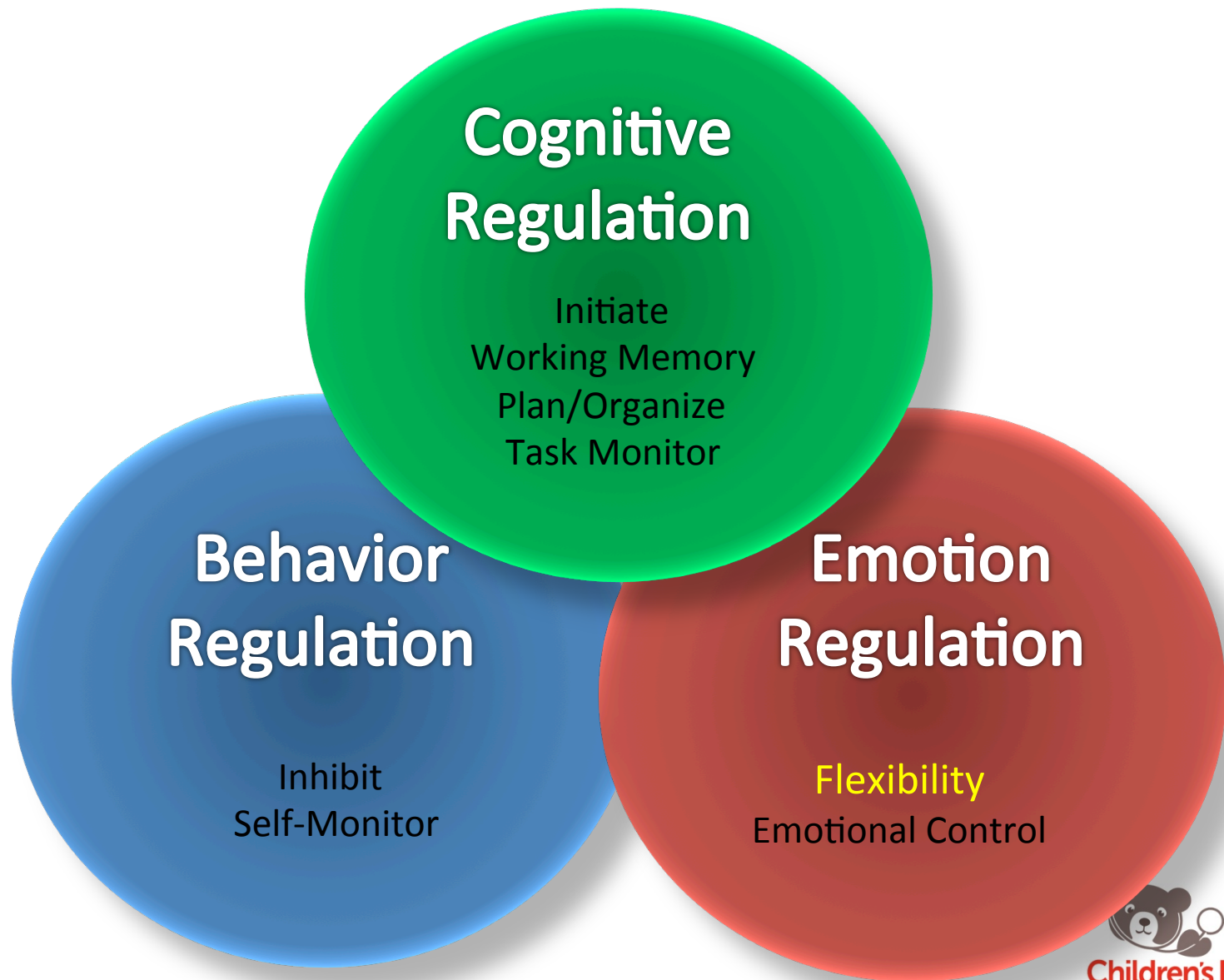
Neurodiversity is a civil right



Overwhelmed people can't learn

- Can't vs Won't
- Predictability and structure
- Make Big Picture Explicit
- Talk Less, Write More
- Avoid Overload
- Keep it Positive

Three Factor Model of Executive Function



Most Common EF Challenges in ASD

Flexibility

- Transitioning from one activity to another
- Changes in routine
- Violations of expectations
- Seeing more than one way of doing things
- Easy to get stuck

(Rumsey, 1985; Hill, 2004,
Kenworthy et al, 2008)



“Asperger’s is like a vise on your brain. And each unexpected event is like another turn on the vise...it just keeps building until you feel like you’re going to explode. Sometimes when you explode, it comes out the wrong way.”

- A young student with ASD



What does cognitive inflexibility look like in school and at home?

Can't or Won't?

- Accept feedback
- Accept different opinions, ideas
- Handle frustration
- Start something they don't want to do
- Stop meltdowns
- Stop doing something even they have been told to stop
- Avoid shutting down when something is challenging
- Stop correcting people
- Let other kids take the lead when playing



Inflexibility Risks and Accommodations

Difficulty with violations of expectations

- Schedules, Routines, Predict change, Flexible Adult

Rigid interpretations of rules

- Respect need for clear, explicit expectations, Flexible Adult

Overwhelming intense feelings

- Breaks, Downtime, Safe Address, Flexible Adult

Problems Negotiating

- Compromise, Explicit Etiquette Rules, Flexible Adult

Repetitive Behaviors/Intense Interests

- Decide where they can/can't happen, agree on a sign



Accommodations: Inflexibility

Inflexibility is adaptive. It limits unexpected, overloading events.

- **Overload is dangerous:** It leads to anxiety, impulsivity, inappropriate behavior
- **Overload creates profound risk** in context of social isolation, teasing and bullying
- **In a mine field it is wise to use caution**

Respect

- Routines that don't interfere
- Deep datasets
- Expertise in areas of interest
- Persistence
- Reliability



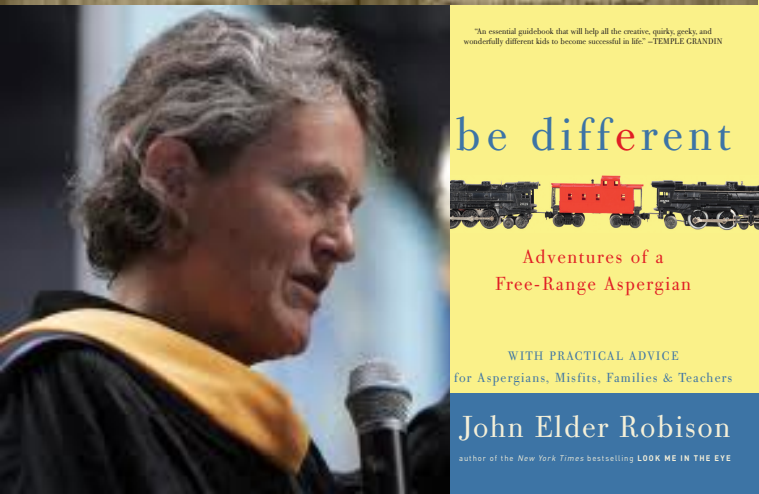
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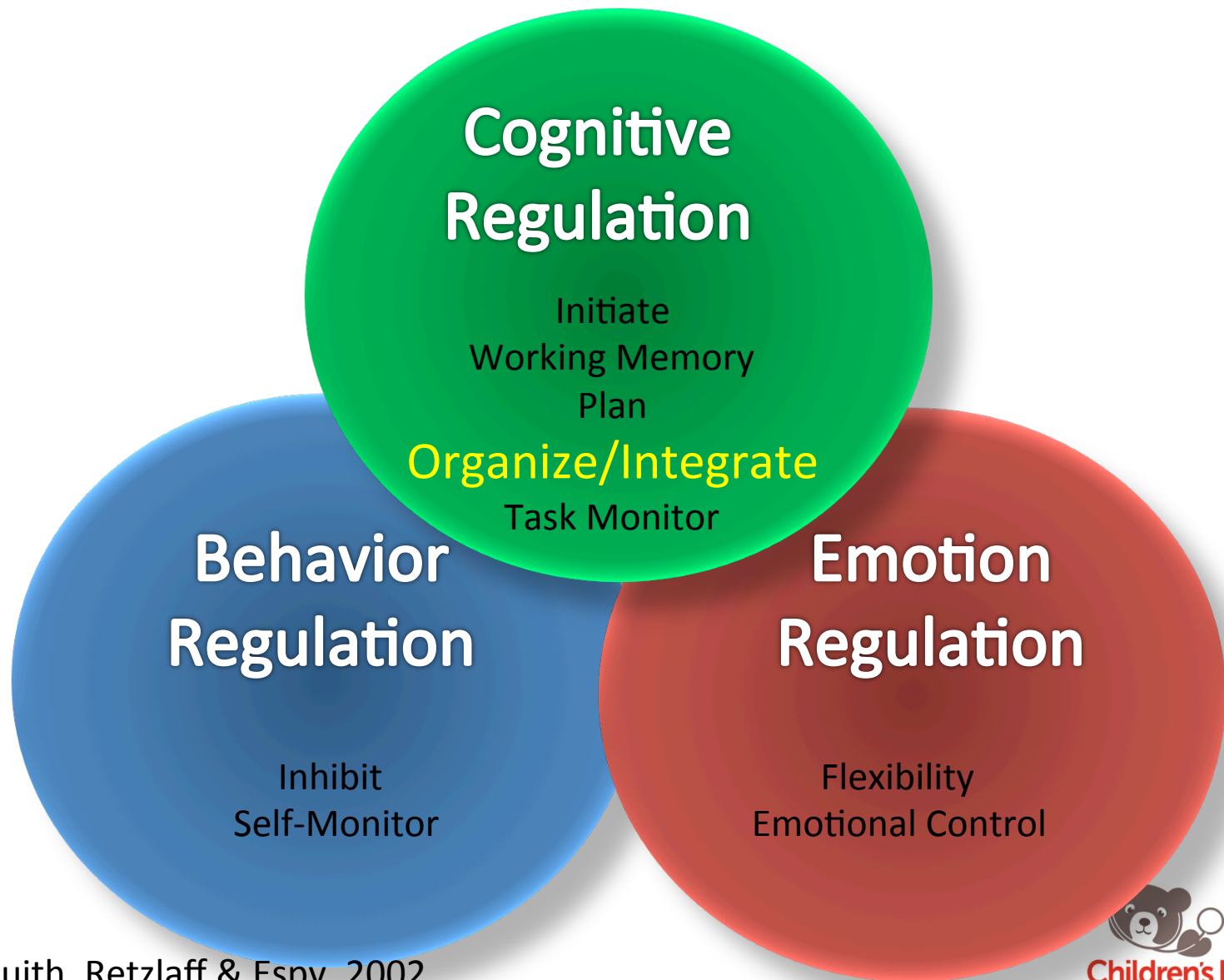


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Three Factor Model of Executive Function



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(Rumsey, 1985; Hill, 2004, Kenworthy et al, 2008)

Planning/Organization

- Knowing how to accomplish a goal
- Prioritizing
- Identifying main idea and organizing thinking
- Can't see the forest for the trees

(Ozonoff, 1991; Hughes, 1994; Kenworthy, 2005; Hill, 2004)



What do organization/integration deficits look like in school and at home?

Can't, or Won't?

- Gets stuck on details
- Get good ideas onto paper
- Stop dominating a classroom discussion
- Let go of a small mistake or inconsistency
- Behave in unstructured groups
- Set a goal
- Link new learning to old learning
- Write a well organized paragraph
- Draw meaning from a reading assignment
- Know what to study for on a test

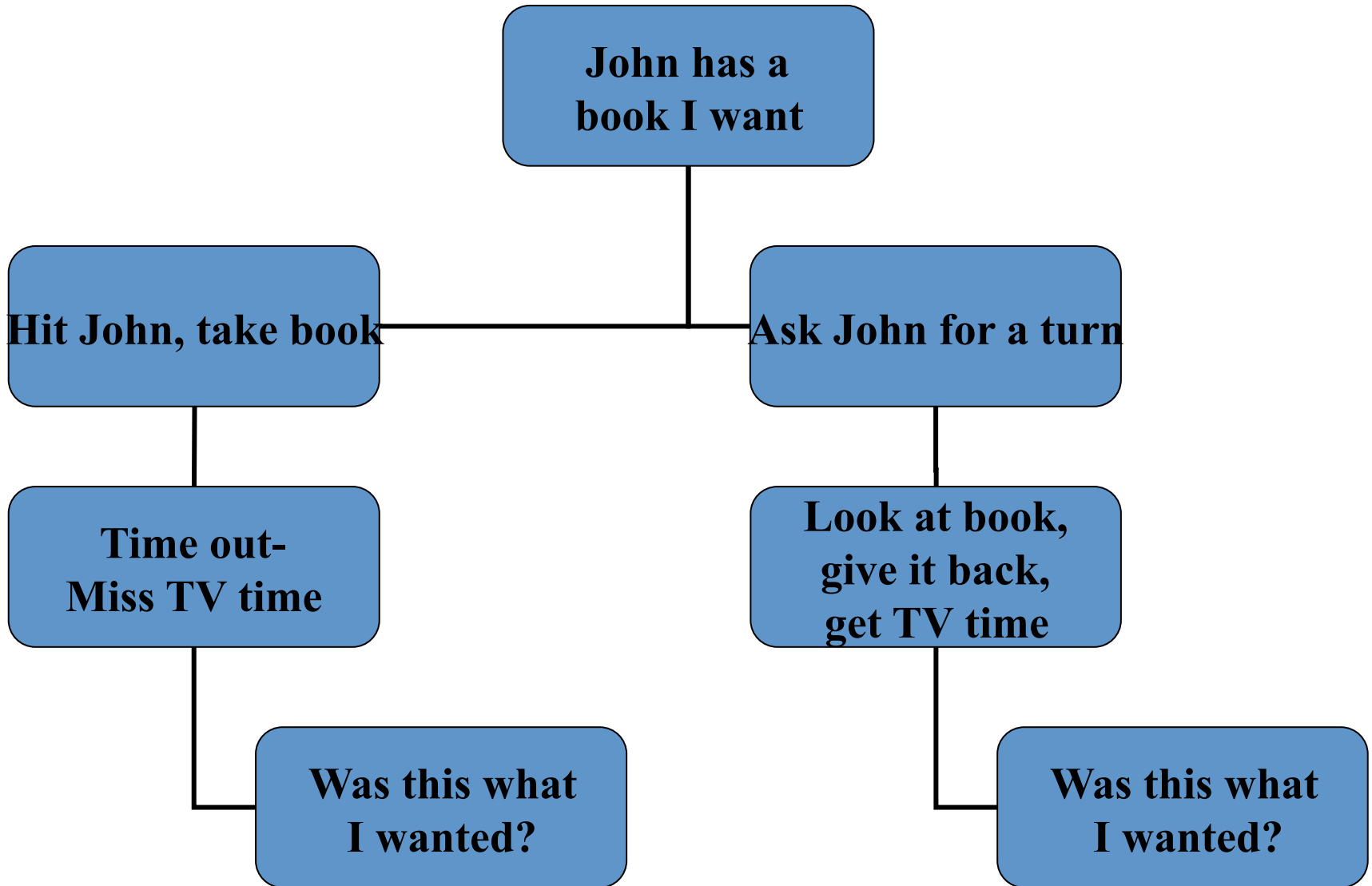


Accommodations for Disorganization

- Emphasis on goals
- Safe Address
- Teach to strength: explicit short rules, recipes, checklists and routines.
- Put new information in familiar context.
- Explicitly review inferences, nuances.
- Predict decline in abilities as size of group increases.
- Study guides, closed format tests
- Writing rubrics



Break it Down



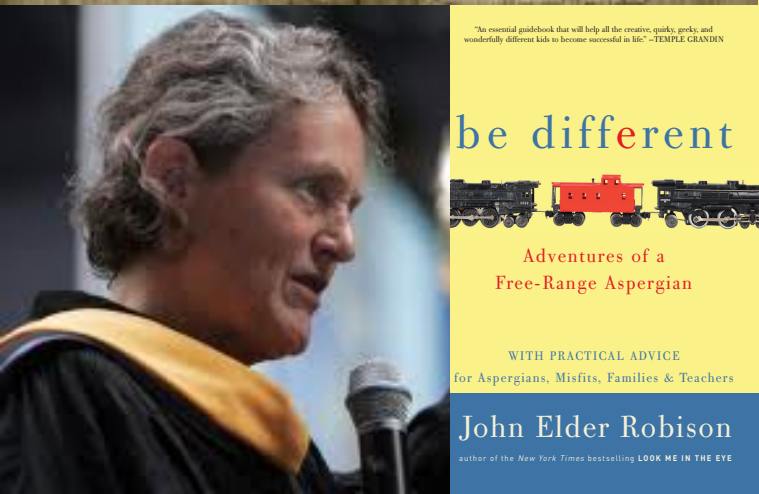
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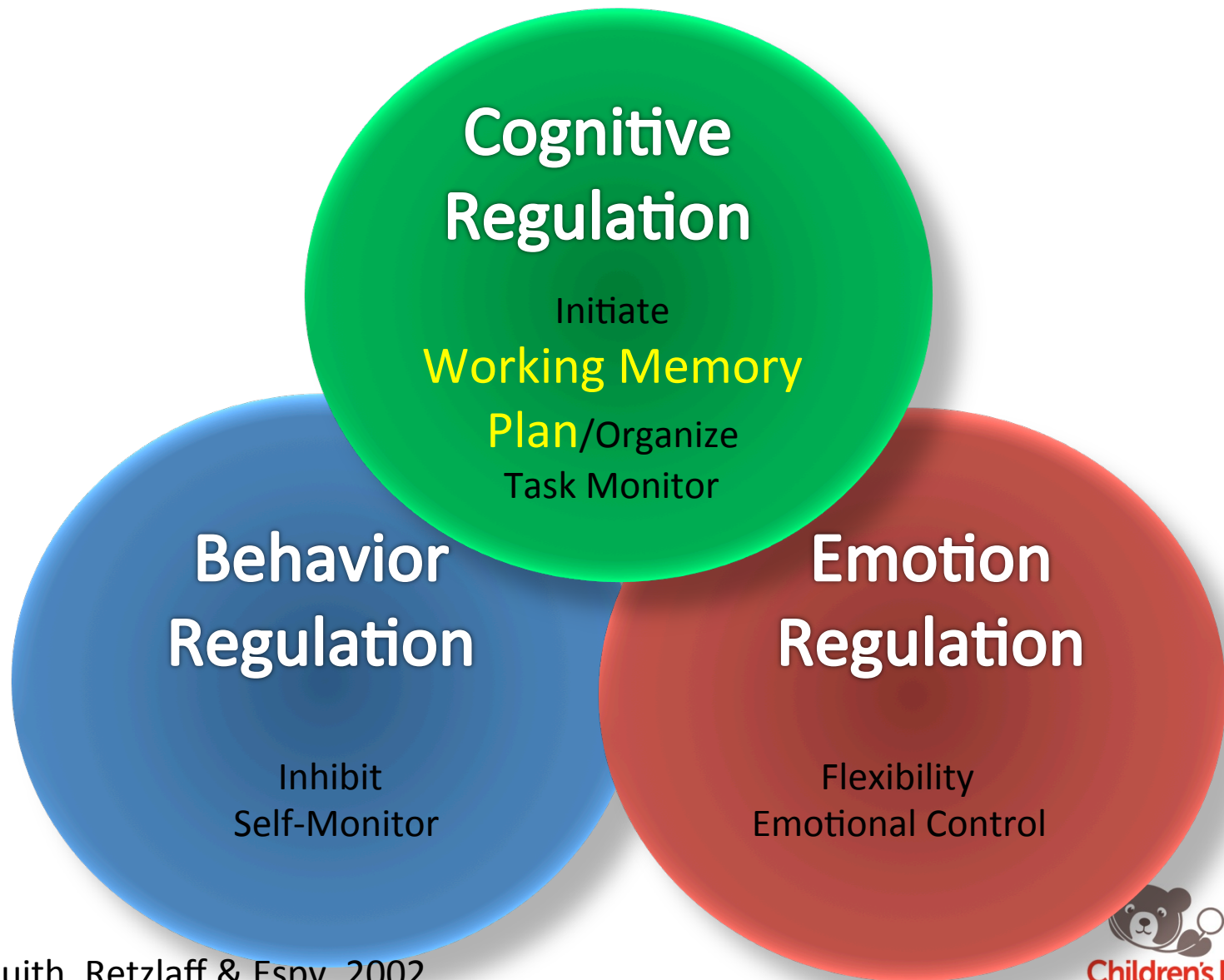


Overwhelmed people can't learn

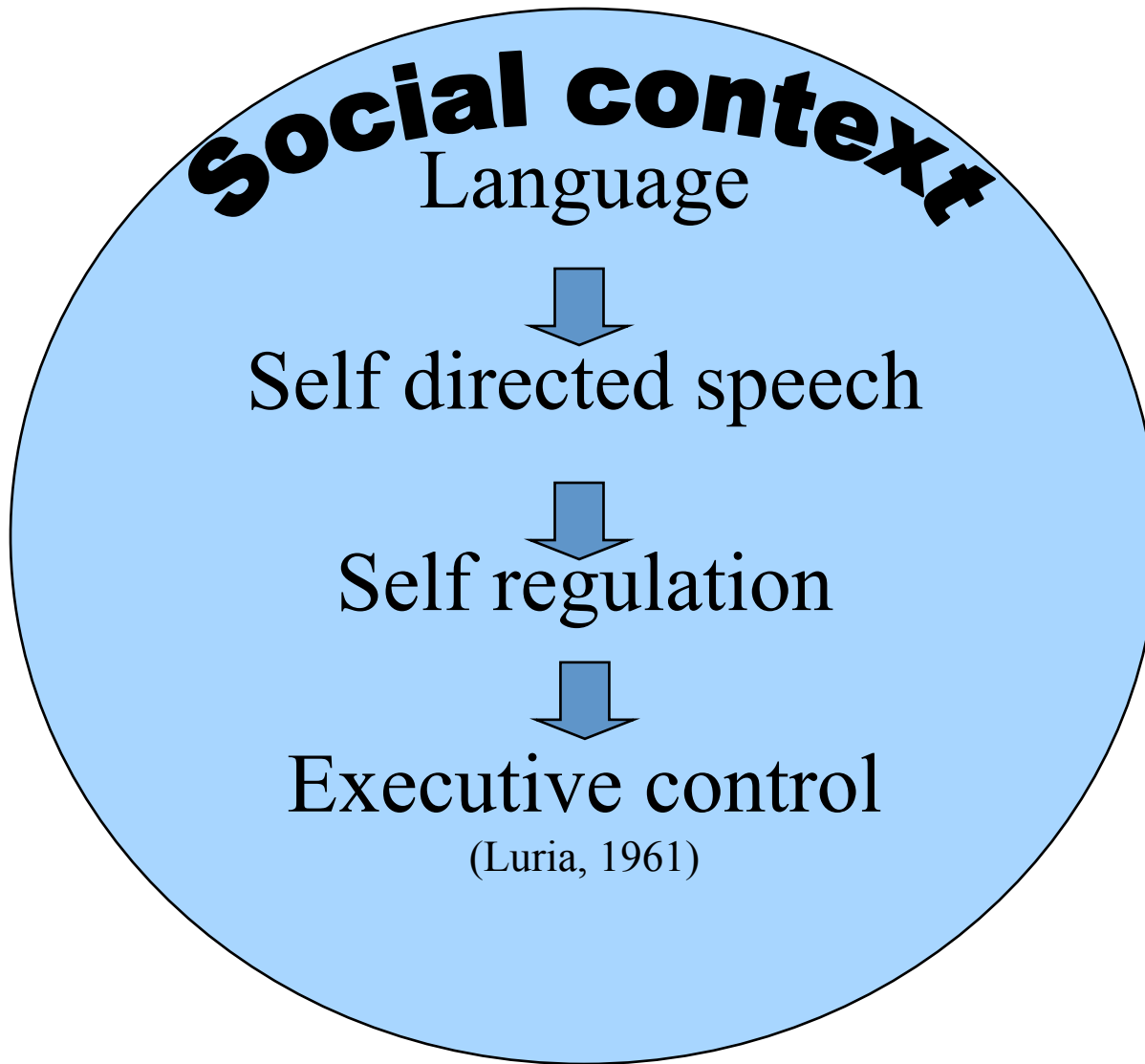
- Make Big Picture Explicit



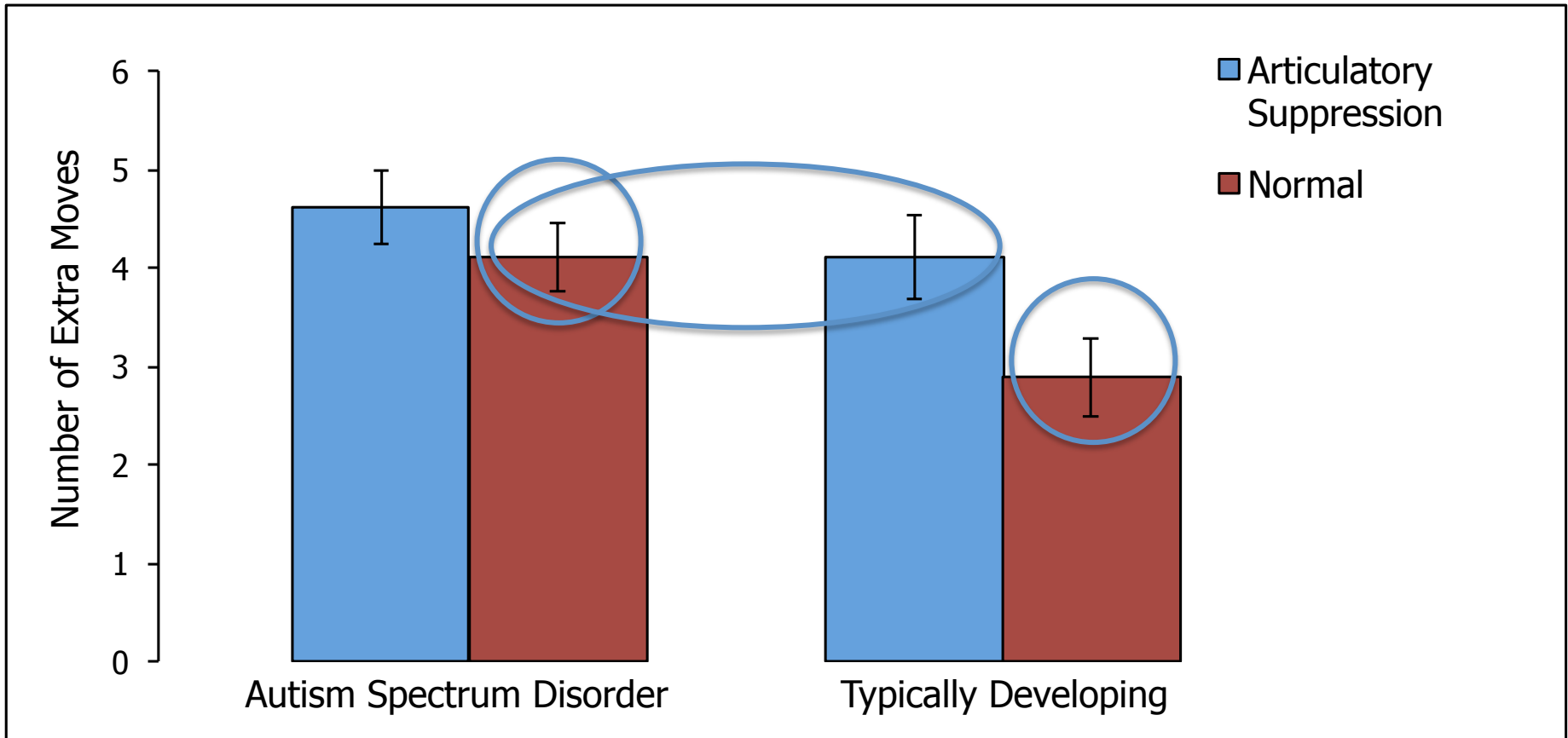
Three Factor Model of Executive Function



The Importance of Inner Speech



Inner Speech and Planning



Poor planning/Inner Speech/Working Memory Looks Like:

Won't follow directions, work independently

- Talk Less, Write More: White Boards
- Use technology for tracking tasks, calendar, writing
- Communication: e-mail, texting
- Notes
- Computer-based curricula
- Socratic method



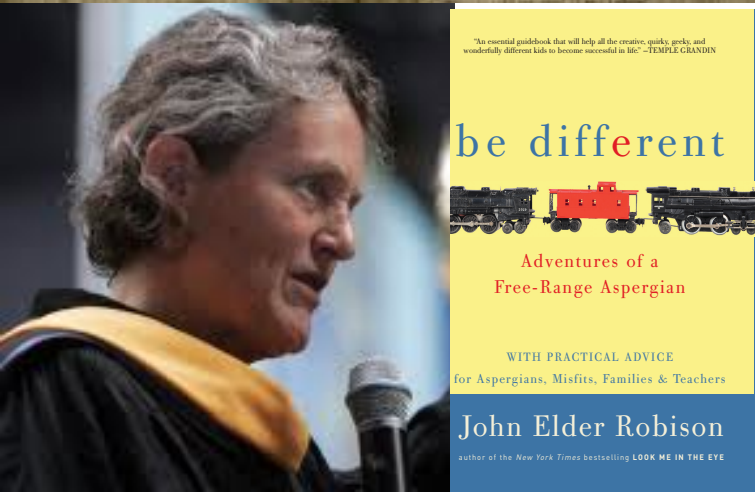
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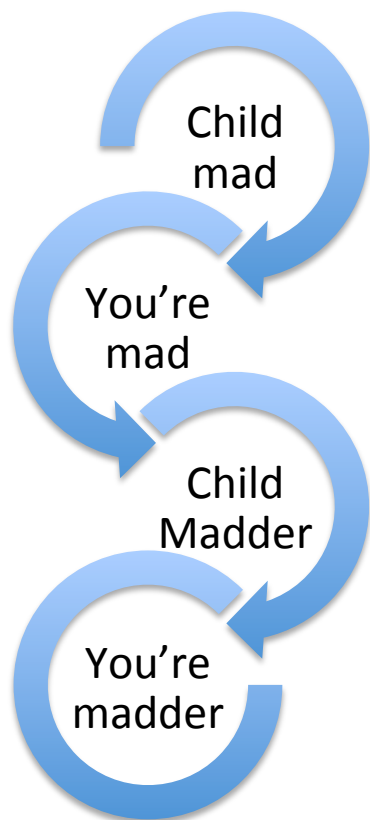
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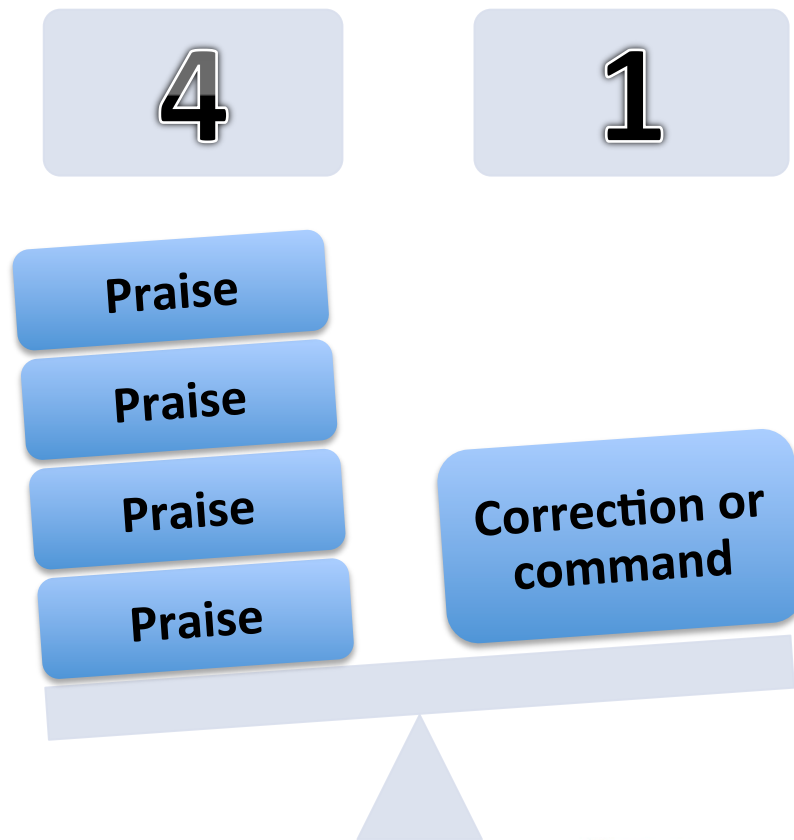


The most important accommodations of them all: **Be Flexible and Keep it Positive!!**

**Emotions are Contagious
...and Flexibility is too**



**Reinforcement Breaks the
Cycle**



<i>The Power Struggle Way:</i>	<i>Another Way:</i>
<p>Teacher: Please start your math worksheet, Mary.</p> <p>Child: In a minute</p> <p>Teacher (annoyed): Mary I already asked you once. I need you to do it now.</p> <p>Child: NO.</p> <p>Teacher: Mary, if you don't start right now, you will get a 0 and lose recess!</p> <p>Child: Don't you have anything better to do than boss me around?! [throws worksheet and pencil]</p> <p>Teacher: Go to the principal!</p>	<p>Teacher: Mary?</p> <p>Child: Hold on, let me finish this page.</p> <p>Teacher (after brief wait, allowing Mary's attention to shift): Math will be starting in 5 minutes. What do you need to do?</p> <p>Child (checking list): I need to get out my math book, worksheet and pencil.</p> <p>Teacher: You have 5 minutes, when do you want to start?</p> <p>Child: I'll start now, but if I have time left over can I go back to my book?</p> <p>Teacher: Sure, as long as you can put it away when it's time for math.</p>

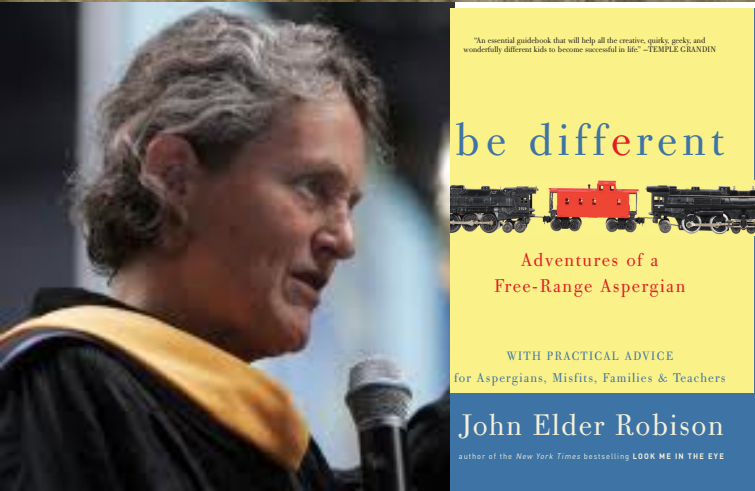
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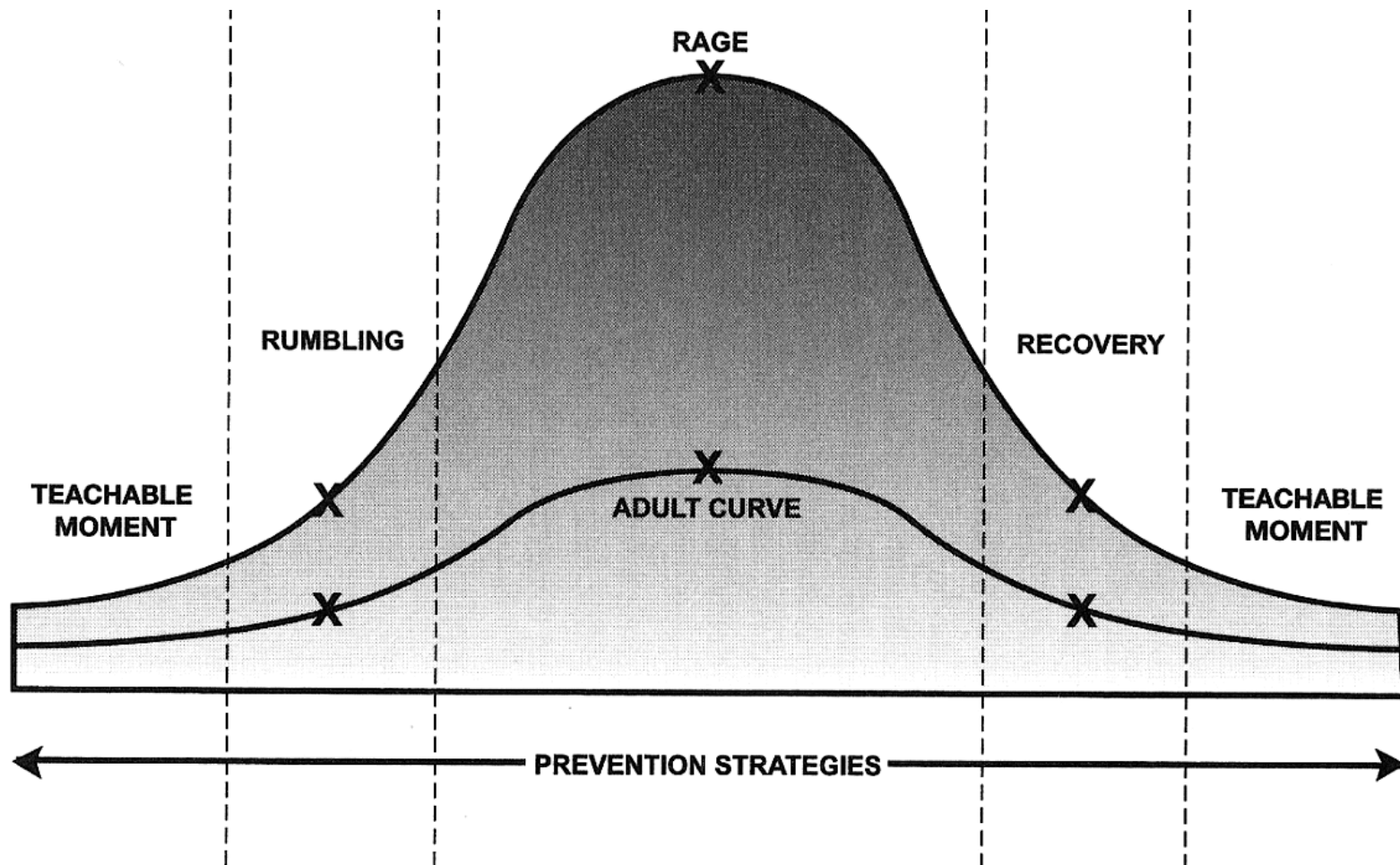
Overwhelmed people can't learn

- Keep it Positive



Overload: Looks like anxiety, impulsivity, meltdowns

Brenda Smith Myles: *AS and Difficult Moments*



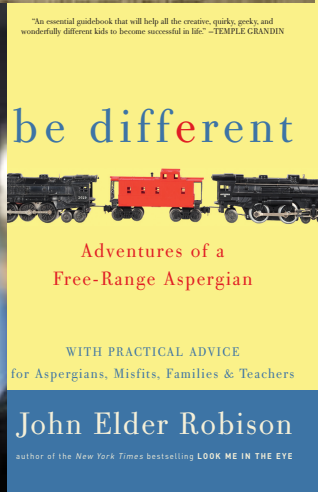
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Overwhelmed people can't learn

- Avoid Overload



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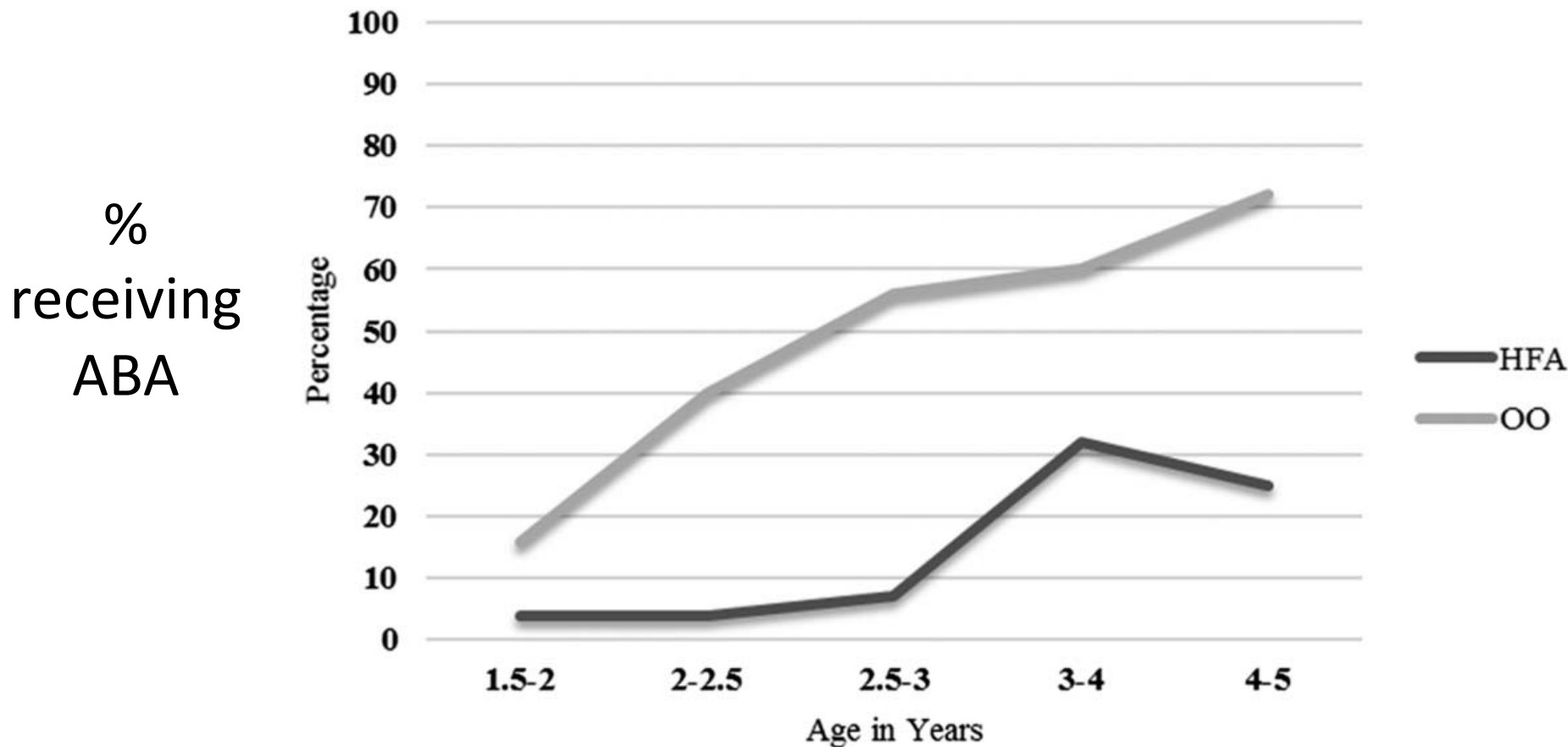
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3. **Teach flexibility, organization & planning skills**



Debbie Fein: What Leads to Optimal Outcome ?

- A few children w/ASD can reach *typical* levels of social functioning with no residual symptoms
- Earlier intervention and more ABA (Orinstein et al, JDev Behav Pediatr, 2014)



Teaching Executive Function Skills

OR... bridging the dissociation between knowing and doing

The Challenge:

- A student with ASD: *“My biggest problem in college has been executive functioning. I’m not organized, I’m late with everything and I don’t know how to get started. My school did a great job of including me in school, but why didn’t anyone teach me this EF stuff?”*
- EF skills are hard to generalize (Ylvisaker et al, 2003)

The Strategy:

- Embed teaching in the real world: school & home
- Show, model and coach



- Consistency across settings

Teach and use key scripts and words

Teach by doing

- Coach
- Make Implicit Explicit
- Scaffold-fade-generalize

Use visual supports

Make it fun!

- Checklists
- Cues
- White Boards

- Humor, rewards
- Collaborate with child



Scaffold

Fade

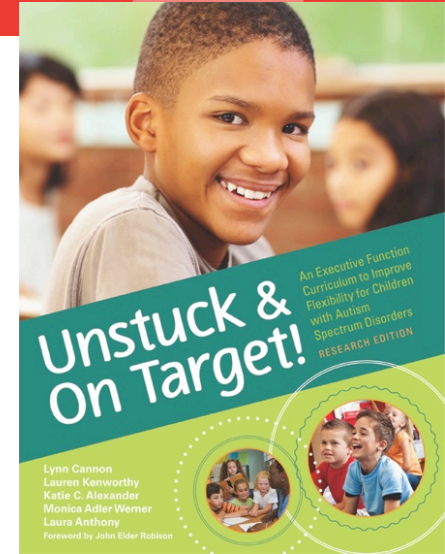
Generalize

<http://www.bianys.org/learnnet>



Children's National™

Unstuck and On Target (Elementary)



#1
Foundational
Skills

#2 What is
Flexibility

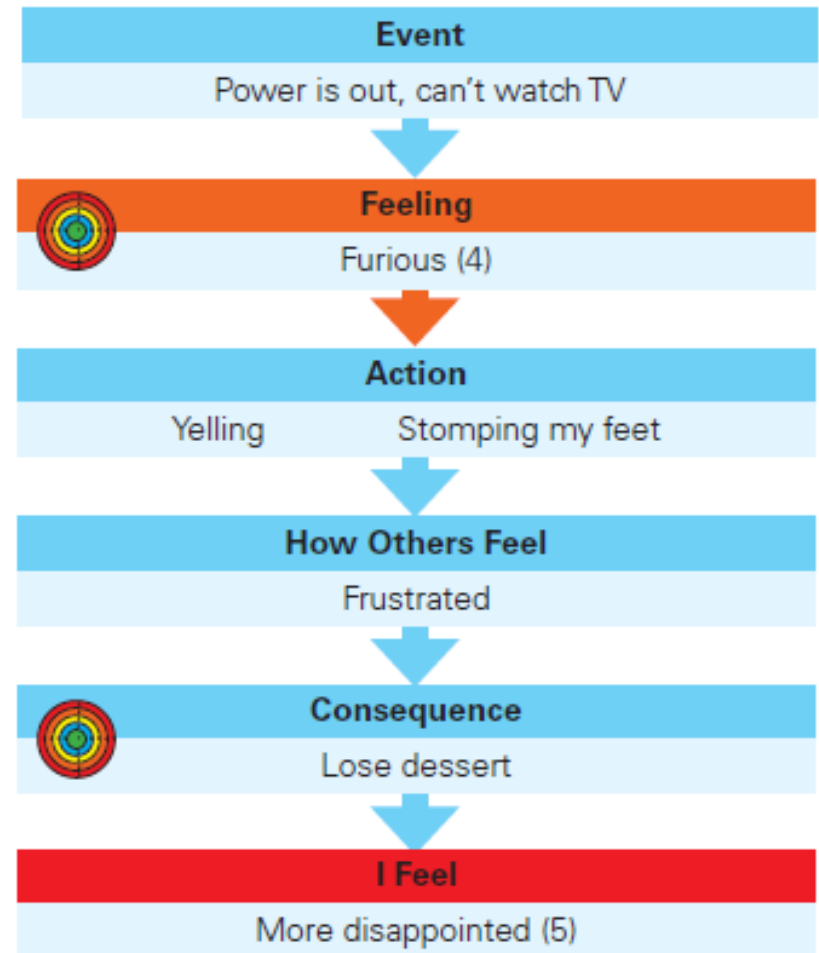
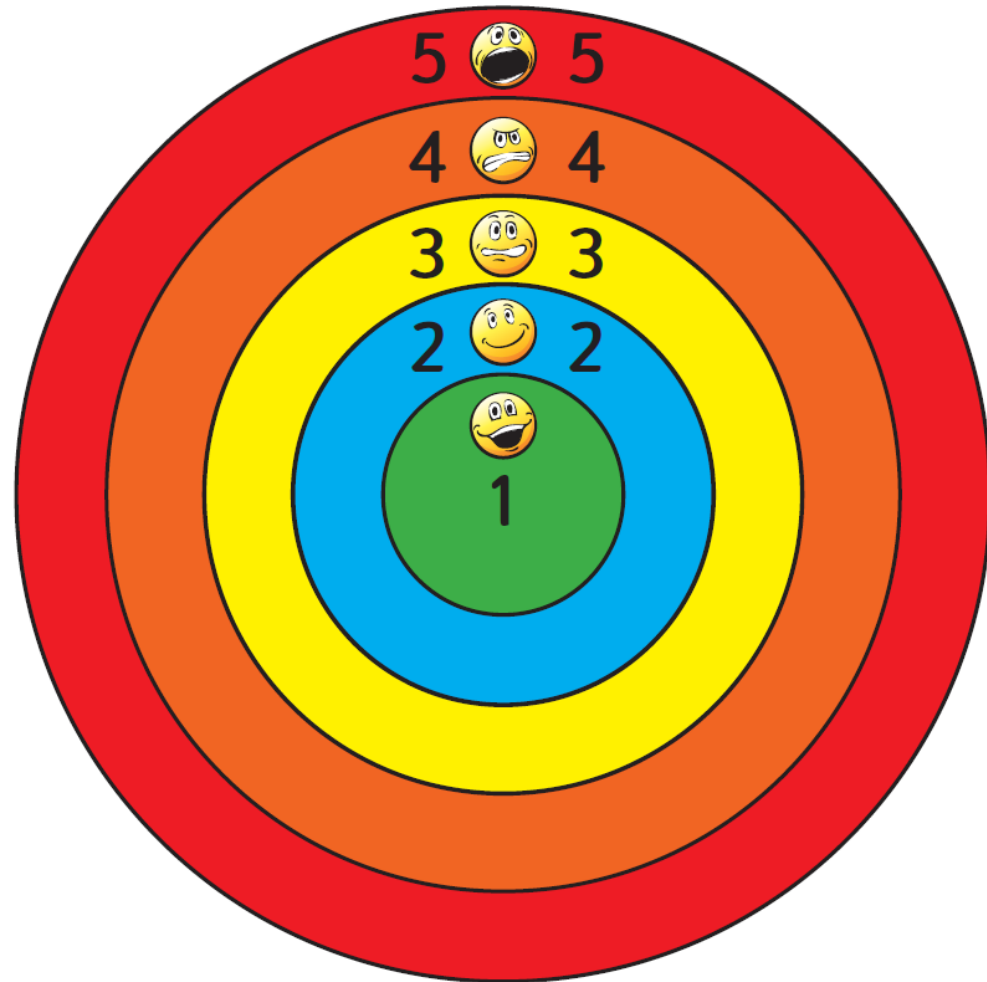
#3 How to be
Flexible

#4 Why be
Flexible

#5 Your Goals:
Getting what
you want

#6 Flexible,
Goal-Directed
Futures

Foundational Skills: Feelings Target & Chain



What is Flexibility and Why Be Flexible

- Advantages of physical flexibility
- The “facts” of life
- What to do when what I want is impossible
- Pie charts: getting part of I want is better than getting nothing at all



Teach How to Be Flexible: Self-Regulatory Scripts

- ✓ Avoid too much talking
- ✓ Refer to the big picture
- ✓ Build an alliance—you're helping
- ✓ Need to be practiced



How to be Flexible: Words and Scripts

Flexible

- Great job being flexible

Unstuck

- I'm getting stuck on ____, how can I get unstuck?

Compromise

- Let's compromise so we both get some of what we want

Plan A/Plan B

- What is our plan?
- What is our Plan B?



Teacher Goal:

To go to bus

Brady's Goal:

To keep playing
kickball

Compromise:

- Play for 20 minutes
- Play the next morning

Plan:

1. If Brady finishes check-out before 3:00 he will get 20 minutes of kickball

2. If my bus gets called before 20 minutes I will take the rest of my time the next morning

Do: Have we done all the steps to accomplish the goal?

Check: How did it go?



Goal: to get the blue piece

PLAN A

he asked for it (it did not work)



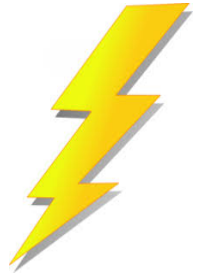
PLAN B

he asked if he could have it next round. (it worked)



Bill really wanted to be the blue piece in the game "sorry," but someone already took the blue piece.

Check: Elementary School Unstuck Lightning Round!



1. True or False: Compromise can help me get part of what I want.
2. True or False: Sometimes all of what I want is not possible
3. True or False: When I am Stuck, I have many choices.



Flexibility Scripts

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Big Deal/Little Deal

- How can we make this big deal into a little deal?

Choice/No Choice

- Is this a no choice situation?

Handling the Unexpected

- What will change?
- What will stay the same?
- Why is the change happening?

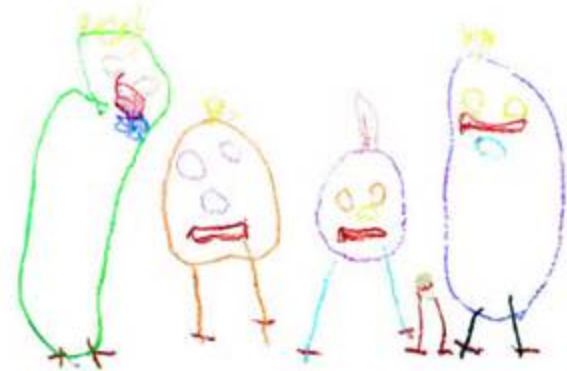
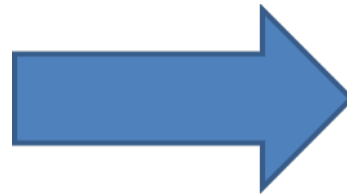


Modeling Flexibility Scripts

- **Accidents:** After a child spills something at the dining table, you could say, “When that spilled and was starting to drip on me, I felt like it was a really *Big Deal*, but then I realized I could make it a *Little Deal* by mopping it up and you helped clean it up. Thanks.”
- **On a play date or at recess.** When a child wants to play Legos, but his or her friend wants to play a board game: “How can you be *flexible* and still reach your goal of having fun with your friend?” “Can you *compromise* and play a board game first and then Legos? Then you will both get what you want in the end, which is better than not getting what you want at all.”
- **Unpopular Chores:** If you got a parking ticket: “Oh, how I wish paying this parking ticket was a *choice* situation...”








Expect the Unexpected and Disappointment: “When something you expect to happened doesn’t happen.”



GPDC (goal, why, plan, do, check)

Goal	To have fun at recess
Why	Recess is my free time
Plan A	Ask Johnny if he wants to play soccer
Plan B	(If J says, “no”) Ask Melissa to play soccer
Plan C	Swing on the swings
Do	Follow my plans
Check	Did I meet my goal? Which plan worked? Would I do it the same or different next time?



MISSION POSSIBLE											
GOAL 	What is my mission for today? To have a fun play date with Adam										
PLAN(S) 	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="text-align: center;">Plan A</p> <p>What is my plan for my mission?</p> <ol style="list-style-type: none"> Pick up Adam from his house. Go to the park Ask Adam if he wants to play on the swings or the climbing wall. If I feel tired or need a break I can tell Adam I need few minutes to myself. Have a snack. Drive Adam back to his house. </div> <div style="width: 45%;"> <p style="text-align: center;">Plan B</p> <p>What is an alternative plan?</p> <ol style="list-style-type: none"> If the park is too crowded or Adam does not want to go to the park we can go back to my house. Ask Adam if he want to play Legos or soccer. </div> </div>										
DO 	<p>What plan did I use to complete my mission?</p> <table style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;">Plan A</td> <td style="width: 33%;">Plan B</td> <td style="width: 33%;">Other (explain)</td> </tr> </table>	Plan A	Plan B	Other (explain)							
Plan A	Plan B	Other (explain)									
CHECK 	<p>Did I accomplish my goal? YES NO</p> <p>How did it go?</p> <table style="width: 100%; text-align: center;"> <tr> <td style="width: 20%;">1</td> <td style="width: 20%;">2</td> <td style="width: 20%;">3</td> <td style="width: 20%;">4</td> <td style="width: 20%;">5</td> </tr> <tr> <td>Not so good</td> <td></td> <td>OK</td> <td></td> <td>Great</td> </tr> </table>	1	2	3	4	5	Not so good		OK		Great
1	2	3	4	5							
Not so good		OK		Great							
NEXT STEP 	<p>Tomorrow, I will...</p> <p style="text-align: center;">MOVE ON TRY AGAIN</p> <p>Why?</p>										

Modeling Goal Use

- *"I need to set a goal."*
- *"Let's set a goal!"*
- *"My goal is to....."*
- *"You did a great job making a goal!"*
- *"That's a terrific goal!"*
- *"Are we on target?"*
- *"What is your goal?"*
- *"A goal is something you want or need to do."*
- *"I can see you really want to keep X as your friend, I think your target goal is to be a good friend"*
- *"I know you really want to be a video game programmer- if this is your target goal, what are the things you need to do to accomplish this goal?"*
- *"Oh man, I got so off target just then."*
- *"Way to stay on target!"*



Modeling GWPDC

Plan

- *"Let's make a plan!"*
- *"I need a plan."*
- *"Let's make a Plan B/Plan C, etc."*
- *"Are you working on your plan?"*
- *"Do you have a plan?"*
- *"You are terrific at making plans!"*

Check

- *"How did it go?"*
- *"Okay, now I will check to see if I followed my plan."*
- *"Did your plan take more or less time than you predicted?"*
- *"You did such a terrific job trying out your plan, did it work?"*



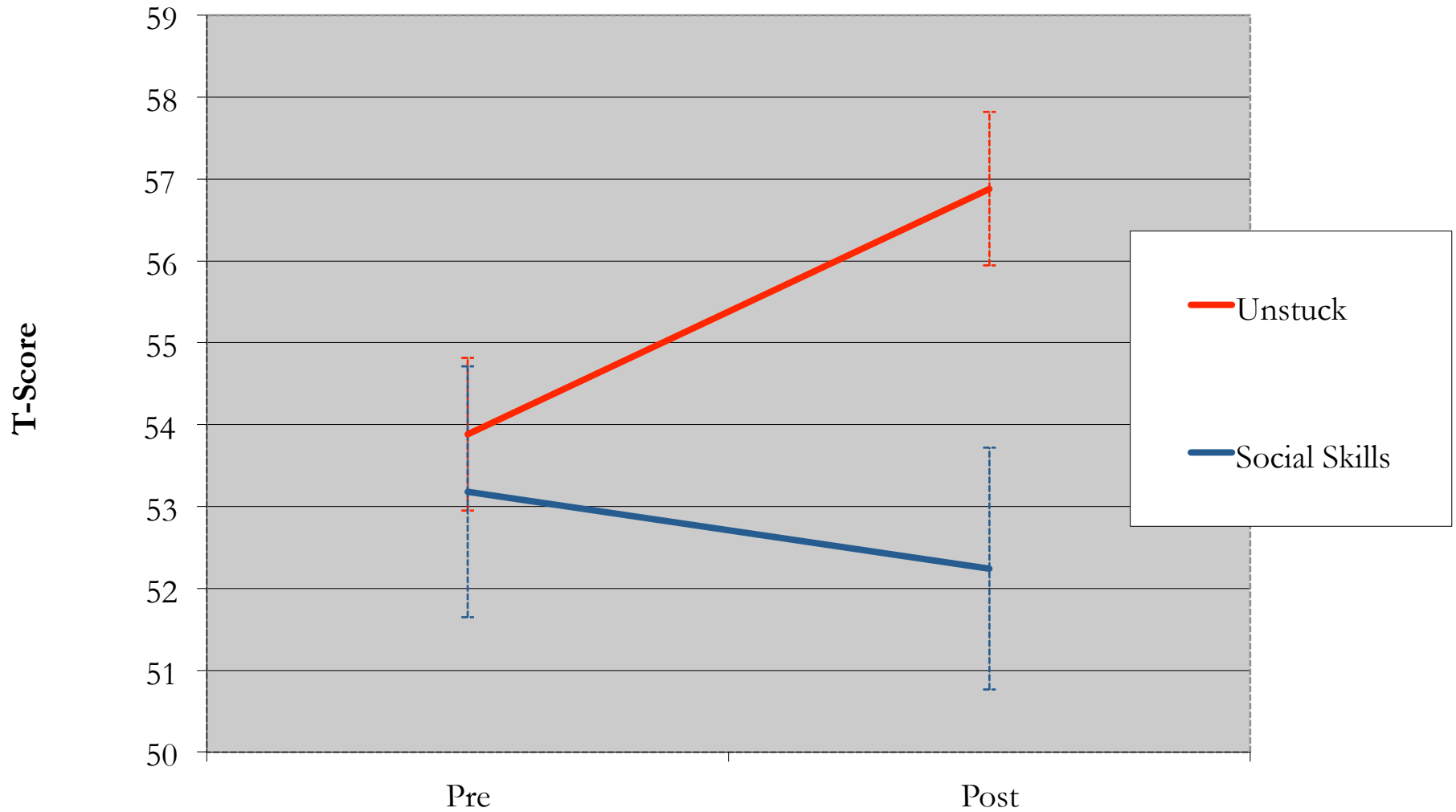
Unstuck Trial: Participant Demographics

Kenworthy & Anthony et al., 2014

	Unstuck (n=47)	Social Skills (n=20)
Male	87%	90%
White	70%	55%
On Psychotropic Medication	55%	60%
	Mean (SD)	Mean (SD)
Age	9.49(1.00)	9.58(1.10)
Mother's education	1.91(0.88)	1.95(0.76)
Father's education	2.04(1.12)	1.95(0.91)
WASI FSIQ	108.80(18.52)	107.63(17.20)
ADOS Social+Comm	11.64(3.76)	12.00(4.39)
ADOS Stereotyped Beh	1.98(1.71)	1.90(1.33)

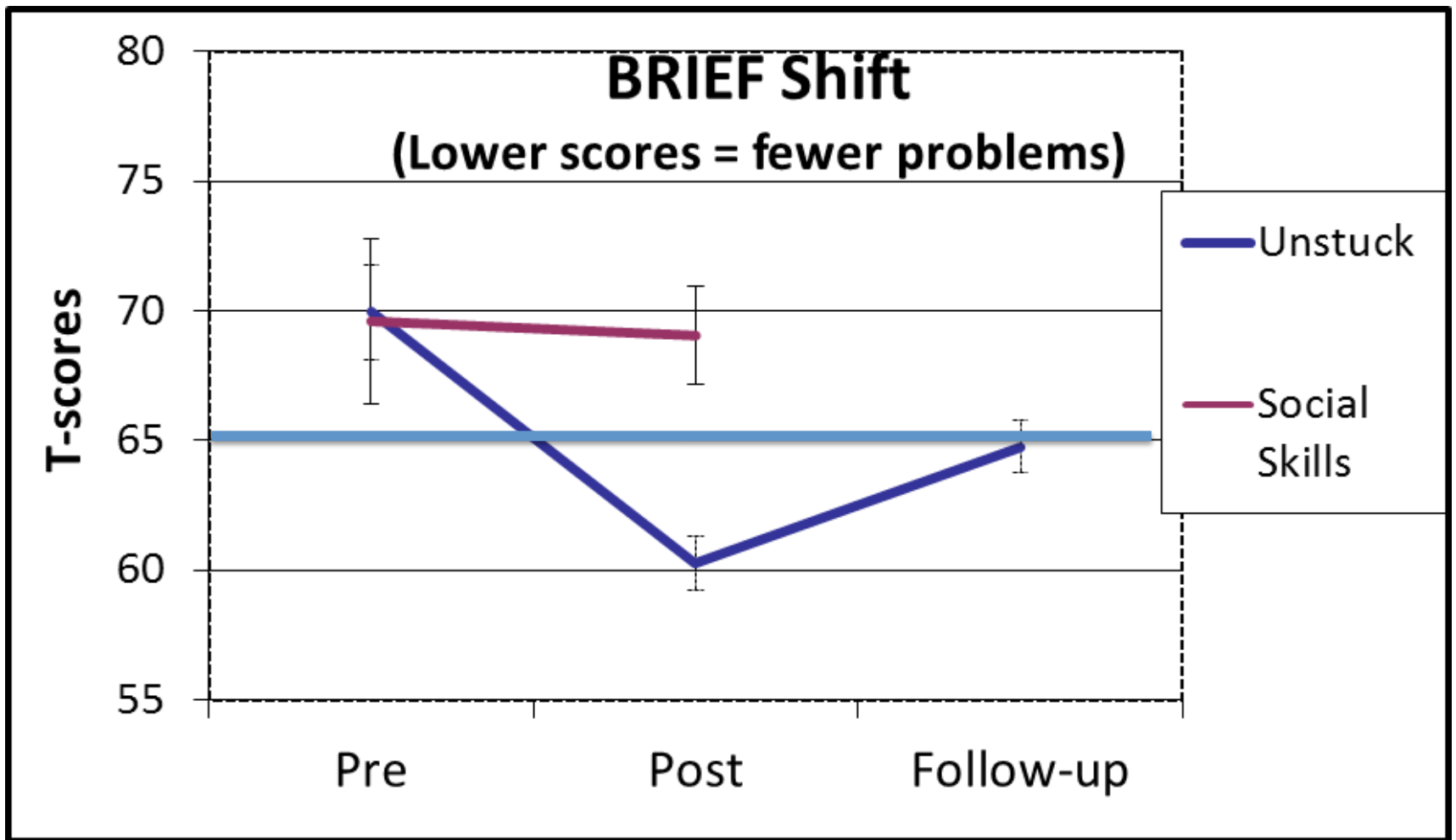
WASI Block Design

Higher Score = Better Performance

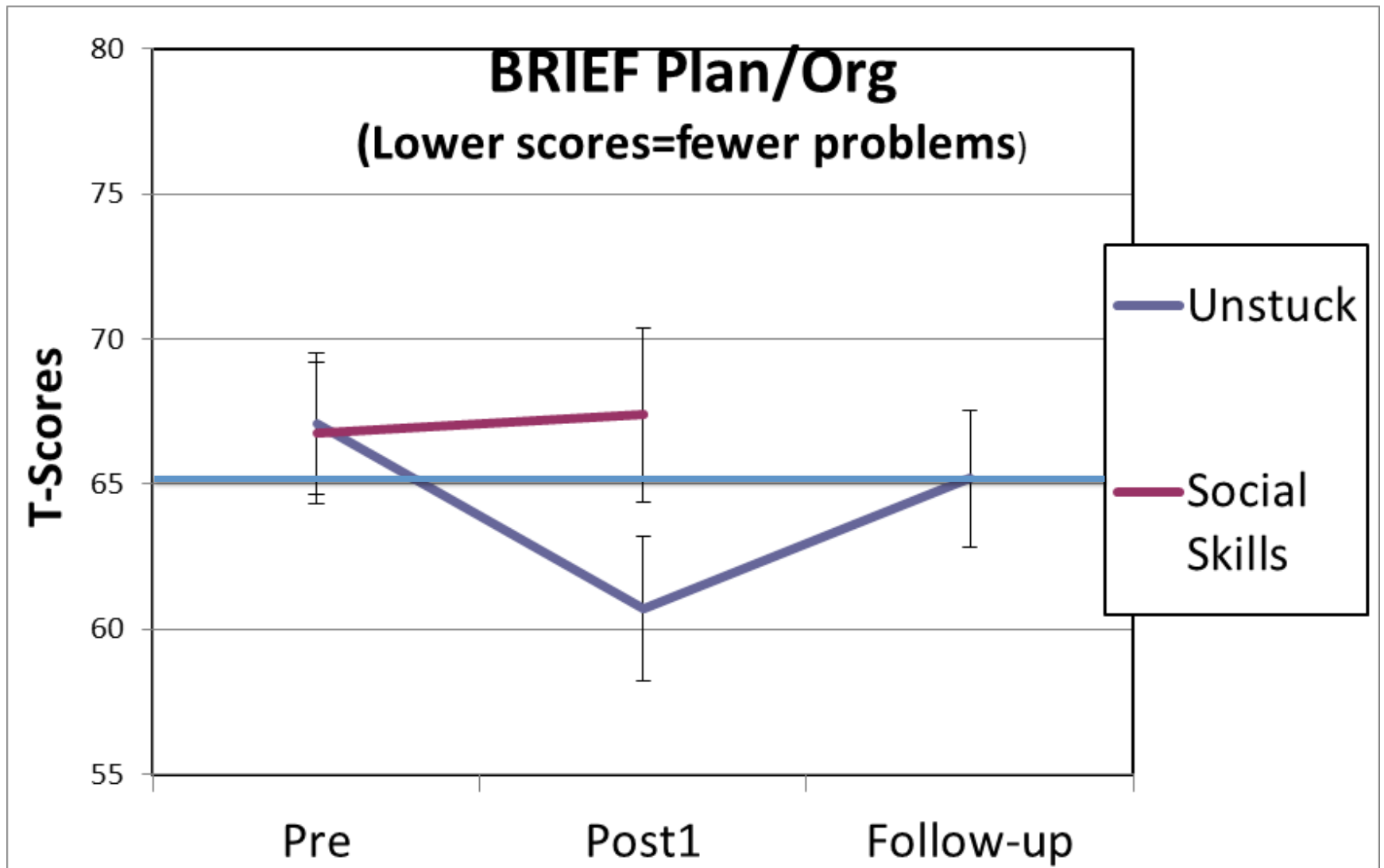


Cohen's $d=0.65$

Kenworthy & Anthony et al., 2014



Pre vs Follow-up
 $t(30) = 3.16,$
 $p < .01, d = .46$



Pre vs Follow-up:
 $t(30) = 1.46, p = .154$

Blinded Classroom Observations

