

# Research Insights into Promoting the Well-Being of Children and their Families



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# What do children need most?



**What children need  
most is to know they  
are deeply loved.**



“Children who are truly loved...know themselves to be valued. This knowledge is worth more than any gold.”

Scott Peck, *The Road Less Traveled*



Jerome Frank conducted a study comparing many different forms of psychotherapy to.

He concluded:

Regardless of which form of psychotherapy, the most successful clinical outcomes were achieved by....

those who cared deeply about their patients and were able to communicate that caring to the patients

**Jerome Frank concluded that:**



**“A totally untrained therapist who exercises a great capacity to love will achieve psychotherapeutic results equal to the best.”**





The best body of work on the relative effectiveness of different forms of psychotherapy can be found in Bruce Wampold's 2001 book:

***The Great Psychotherapy Debate:  
Models, Methods, and Findings***

He concluded that:  
the client-therapist relationship trumps  
technique hands down.

**The same is true for  
parents and teachers**





# What matters most in Early Childhood Education?

Not the # of children

Not the caregiver:children ratio

Not having the best materials

but the caring relationship between  
the teacher and the children

As international studies show (e.g.,  
Melhuish , 1990 a & b)

Parental nurturance / terrific mothering  
**largely wipes out** the differences in  
academic and health outcomes by SES.

Hackman et al. (2013) PlosOne

Bronfenbrenner & Morris (2006), chap. 14 in  
Handbk of Child Psychol. (eds. Damon & Lerner)

Similarly, rats genetically predisposed to  
be more fearful and damaged by stress,  
grow up to be robust in the face of stress  
if they've had great mothering.

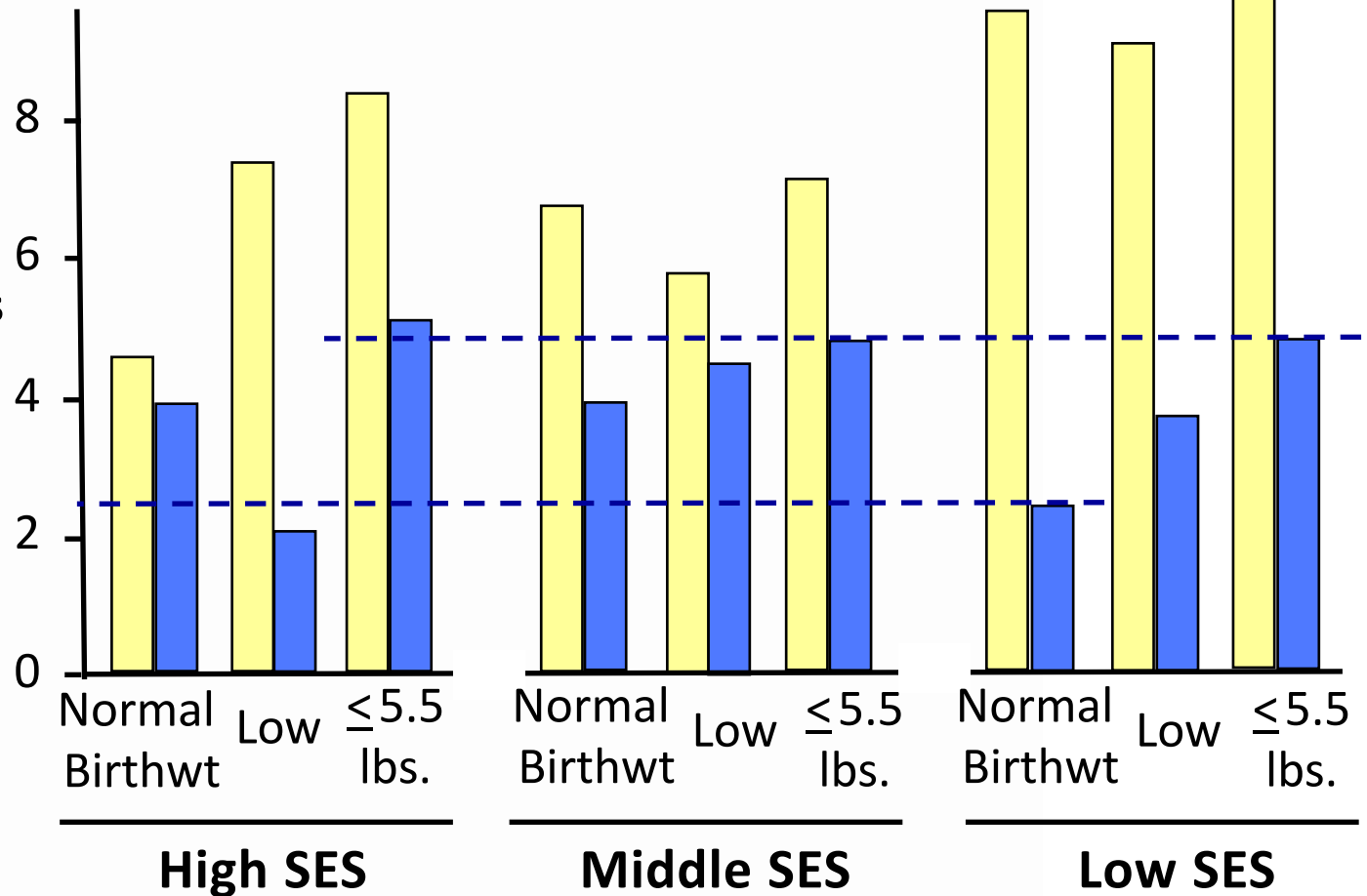
Michael Meaney's work

# Impact of the Quality of a Mother's Responsiveness to her Child at Age 2 on the Number of Observed Behavior Problems in that Child at Age 4

Less Responsive Mom

More Responsive Mom

Average Score on Behavior Problems





**Haven't read all the books?**

**Don't have much money?**

**Can't afford the newest toys or gadgets?**

**RELAX**

**Your humanity is more important than  
material possessions or even doing  
the textbook-perfect thing.**

**Mindfulness practice can be excellent for teaching us to be nonjudgmental and for helping us to relax and be less stressed.**

But like anything that becomes institutionalized, like any practice, sometimes the technique (following the rituals) takes precedence over the spirit (the real intent behind the practice).



Like the 'religious' or 'observant' Jew or Christian who goes to synagogue or church each week without fail and observes the prescribed ritual practices, but who treats other people unkindly, is arrogant and proud, or miserly and greedy.

**The goal is not to be a  
champion meditator.**

**The goal is to be a kind,  
compassionate human being, who  
is able to appreciate and find joy  
in the present without worrying  
about the past or future, and able  
to give joy to others.**

Simply put, the goal is to...

**Reduce Suffering...**

**that of yourself and others**

I've been consulting with the International Montessori Assoc. (AMI) about how to better insure that those certified as Montessori teachers do not put slavish adherence to the Montessori method over being Montessori teachers in their heart.



It is certainly possible to technically follow Montessori methods quite slavishly but fail to be the kind of teacher who embodies what the Montessori method of teaching is really all about.

And, sometimes being a true Montessori teacher requires *not* adhering exactly to the techniques one was taught.

**Remember: Your humanity is more important than your knowledge or skill or doing the textbook-perfect thing.**





# The Spirit rather than the Technique

Who would you rather listen to....

the musician who plays from the heart or  
the musician with absolutely perfect  
technique but no heart?

If you happen to do what the textbooks  
caution against, but if it come from the  
right place, it will likely be fine.



Questions?  
Comments?





**Attachment** is what we call the love between a baby and a caregiver.





Secure attachment is the  
cornerstone for everything else in  
life -- interpersonal relations, doing  
well in school, having the  
courage to explore &  
take risks, etc.



Before the term 'attachment' existed,  
**ERIK ERIKSON** called this

**BASIC TRUST**, which he defined as

- knowing beyond any shadow of a doubt that you are loved
- feeling the world is basically a good, safe, trustworthy place
  - where you'll be helped if you need it
  - where things make sense and are predictable.

He considered this 'the cornerstone of a healthy personality.'

**The major insight of Mary Main  
et al. (1985):**

**Direct intergenerational  
transmission of relationship  
patterns, while common, is  
NOT inevitable.**



Many parents who experienced abusive or rejecting relationships growing up, in turn raise children who are insecurely attached to them.

**BUT** other parents with equally unfortunate childhoods **DON'T** – their children are securely attached.

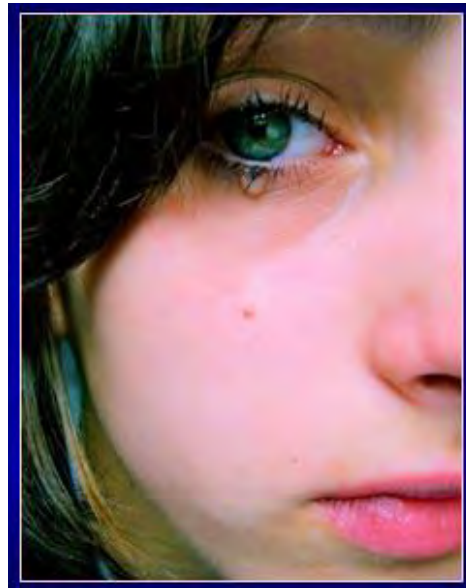
What distinguishes the 2 groups? The ability of the latter to discuss their childhood experiences with emotional openness, coherence, & reflective insight. They seemed to have come to terms with what happened to them, & gained an understanding why their parents behaved as they did.

The outcome can be AS  
GOOD for those insecurely  
attached **IF** they have  
organized their attachment  
experience **into a coherent  
story.**

On the other hand, experiences that are not fully processed can create unresolved and leftover issues that can easily get triggered in the parent-child relationship.

At these times, we're not acting like the parent we want to be and are often left wondering why parenting sometimes seems to “bring out the worst in us”.

**Painful feelings we try to ignore  
or suppress NEVER go away or  
subside as long as we keep them  
buried.**



“Actively inhibiting thoughts and feelings takes energy and effort, even though you may not realize it. It takes effort NOT to think about something or not to let one’s feelings out.

That reduces the energy you have for other things, such as for defending the body against disease or for mental effort in school or out.”

--- James Pennebaker

**The harder you work at  
inhibiting, the greater the  
stress on your body.**

**Holding back thoughts and  
feelings can place you at risk  
for major disease.**



“[We] believe that those unacceptable aspects of [ourselves] create [our] suffering, but it is actually [our] non-acceptance and disowning of aspects of [ourselves] that create all the unhappiness in [our lives].”

Ajaya, S., 1997. *Psychotherapy East and West: A Unifying Paradigm*

**You are not as bad or unloveable as you think.**

**Those parts of you that you are afraid to let others know about will not bother others nearly as much as you fear they will.**

**They'll still love you and your friends will still want to be there for you.**

**The road to recovery  
begins with giving up  
the hope of having  
a better past and  
concentrating instead on  
having the best possible future.**

You cannot re-do or change the past  
and you can't undo the past as if it never  
happened.

Let it go

so you and your children can make the  
most of today and of all the tomorrows to  
come.

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If you can get people to talk or write about their problems, their psychological and physical health improves.

--- James Pennebaker,  
Opening Up: The Healing Power  
of Expressing Emotions



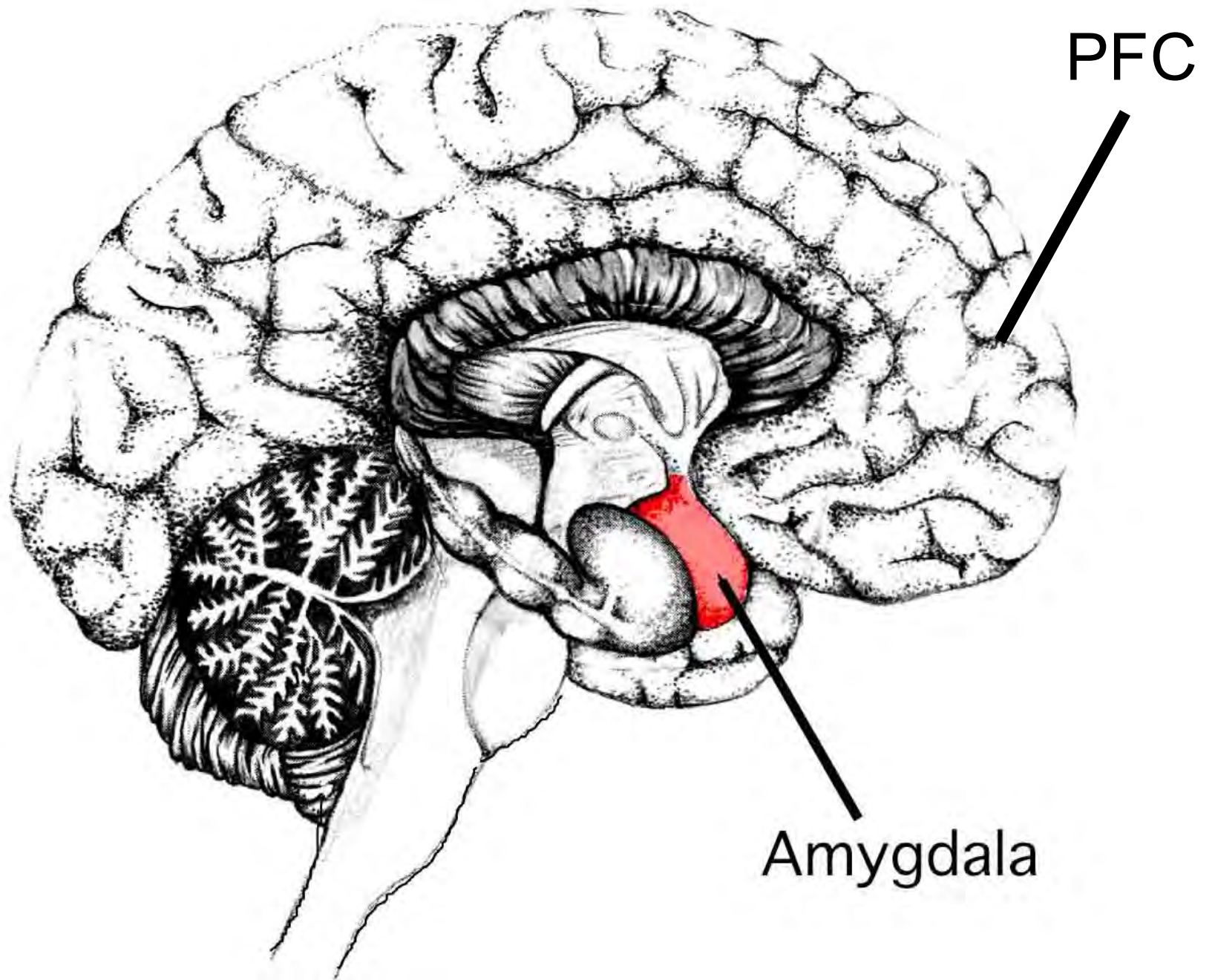
The act of repeatedly telling or writing about your experience results in an organization of the event and a summarizing of it. Over days, the description of the event becomes gradually shorter and more coherent.

Any type of event is less overwhelming and easier to think about once it is summarized. Once organized, events are often smaller and easier to deal with.

# **Putting Feelings Into Words Produces Therapeutic Effects on the Brain**

**It increases activation in prefrontal  
cortex and that decreases activation  
of in the amygdala.**





**a**

Affect Label



SCARED

ANGRY

**b**

Affect Match



**c**

Observe Affect



**d**

Gender Label



SAMUEL

HELEN

**e**

Gender Match

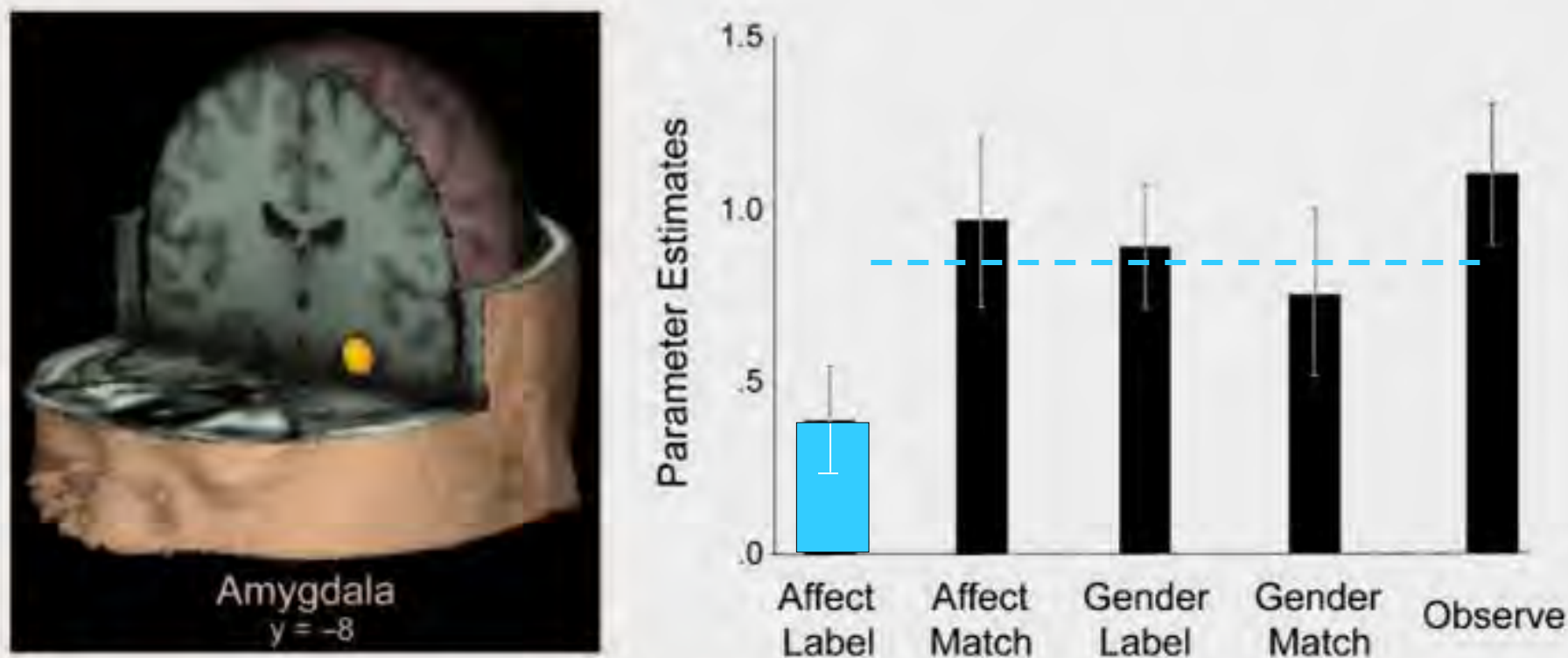


**f**

Shape Match



Amygdala activation went up in ALL conditions when an angry or fearful face was shown, but **ONLY** in the one condition (a) where subjects had to assign a verbal label to the emotion, did amygdala activation **GO DOWN**.

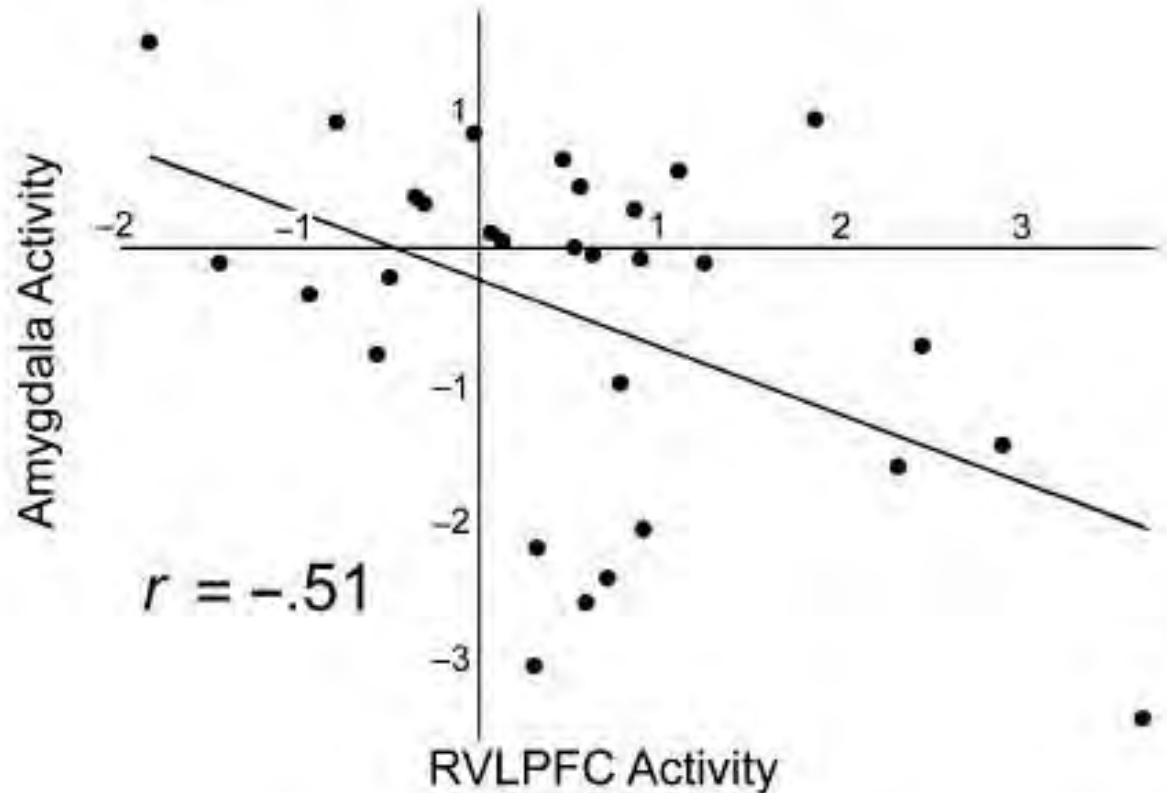
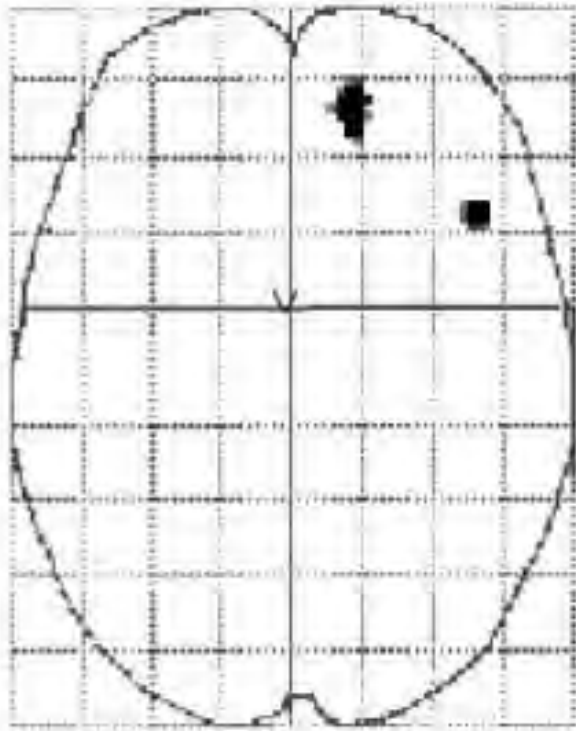


**Fig. 2.** Parameter estimates of activity during five conditions (relative to activity in the shape-match control condition) in an amygdala region of interest (ROI). The ROI was identified by comparing activity in the observe condition and activity in the shape-match condition. The illustration on the left shows an axial slice indicating the extent of the ROI.

**Matt Lieberman et al., 2007**

# Inverse Relation between Activation in PFC and the Amygdala in the Lieberman et al. study

(When activation in PFC goes up, activation in the amygdala goes down.)





# Questions?

# Comments?

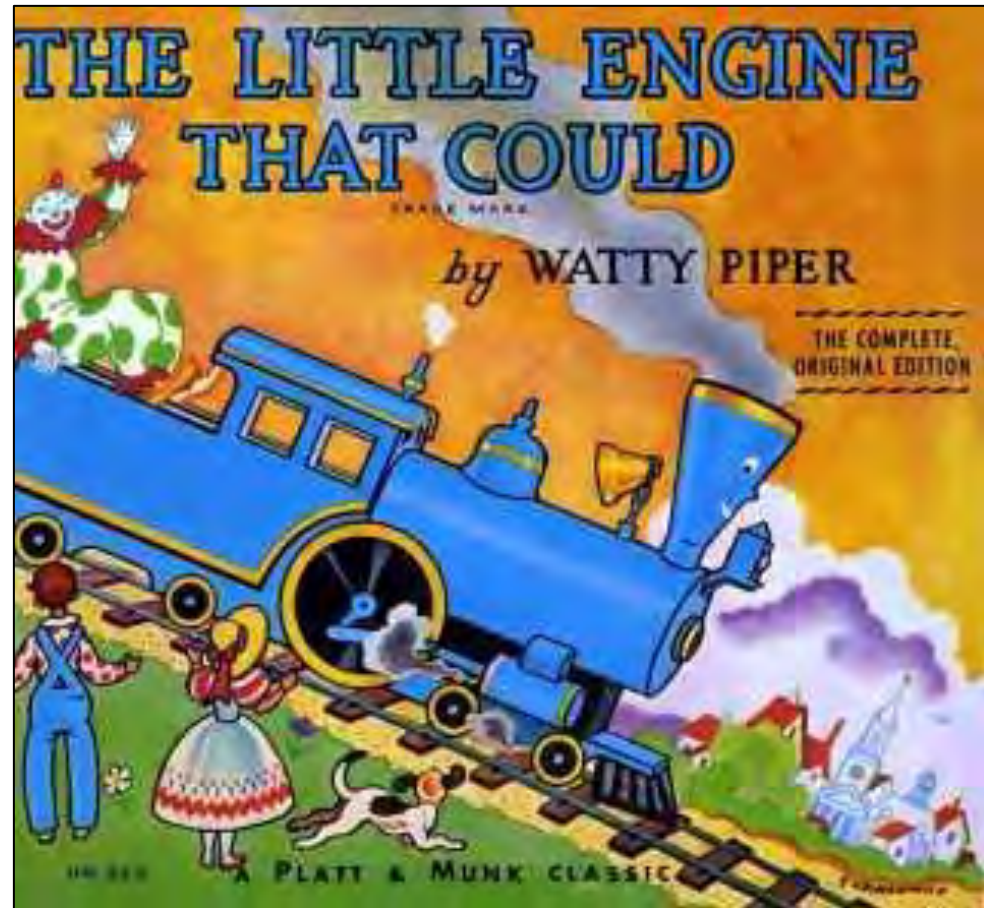


# What else do children need?



CHILDREN NEED TO  
BELIEVE IN THEMSELVES.

THEY NEED  
TO BELIEVE  
THEY CAN  
SUCCEED.





## Three routes to that:

- They need to feel **you** believe in them - that you fully expect them to succeed.
- They need **do-able challenges**. They need opportunities to do things that enable them to see for themselves that they are capable.
- They need to feel **connected to their heritage & proud of their cultural identity**.

It's important to  
communicate loud and  
clear the faith and  
expectation that **EACH**  
**CHILD** will succeed.



**When a toddler falls while trying to walk, we would never say ....**

When a toddler falls while trying to walk, we would never say, “you get a ‘D’ in walking today”; it would never occur to us to say that.

Instead we say, “Don’t worry; I’m sure you’re going to be able to do this.”

How different is that from what children often hear in school. They hear: “You get a D” instead of “There’s no question you are going to be able to do this. And we, together, are going to figure out a way to make that happen.”

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# Powerful Role of the Expectations we have of a child

Pygmalion in the Classroom -- powerful  
role of expectations    Robert Rosenthal

Stereotype threat - female performance on  
math exams    Claude Steele

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**“Treat people as if they were  
what they ought to be and  
you help them become what  
they are capable of being.”**

**– Johann W. van Goethe**





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# Powerful Role of the Expectations a Child has for Him- or Herself

Pygmalion in the Classroom -- powerful  
role of expectations    Robert Rosenthal

Stereotype threat - female performance on  
math exams    Claude Steele

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For ex., there's a stereotype in our culture that men are better in math than women.

And sure enough when a group of researchers went to a univ. & gave a standardized math test, **As a group**, the male students scored higher than the female students.

Then the researchers tested another group of entirely comparable university students on exactly the same test

– the ONLY difference was they **added** one sentence before giving the exam.

They said, “This particular test has been designed to be gender-neutral; on this particular test women score as well as men.”

And what happened? The women scored as well as the men.

It was the **SAME** test as the first group got.

The only difference was whether the women expected themselves to do well or not.

Our expectations for ourselves often become self-fulfilling prophecies



## The second route is:

- They need to feel **you** believe in them - that you fully expect them to succeed.
- They need **do-able challenges**. They need opportunities to do things that enable them to see for themselves that they are capable.
- They feel connected to their heritage & proud of their cultural identity.

Children need opportunities to do things that enable them *to see for themselves* that they are capable: do-able challenges.

(research studies by Duckworth, 2010; Lewis & Goldberg, 1969; White, 1960)

Pride and self-confidence (and joy) come from seeing yourself succeed at something that you know is not easy -- even in the youngest infants.

Remember the old attitude toward women:  
“Don’t worry your pretty little head, we’ll take care of you.”

Well, that paternalistic attitude can often be found even today toward people with disabilities such as blindness and toward indigenous peoples.

We need to give people the opportunity to do things that enable them to see for themselves that they are capable.

We need to help people do what they want to do even if that looks impossible.

Questions?  
Comments?





# What else do children need?



**They'll need the abilities  
& skills critical for  
success in the 21st  
century.**



# 1) Self-control

to resist temptations and not act impulsively

- thinking before you speak or act so you don't do something you'd regret or put your foot in your mouth
- to wait before making up your mind; not jumping to a conclusion or to an interpretation of what something meant or why it was done
- resist blurting out what first comes to mind
- resist 'tit for tat' (hurting someone because that person hurt you)

## 2) Discipline & Perseverance

Having the discipline to stay on task and complete it

- resisting the temptation to quit because you're frustrated, bored, or more fun things are calling
- continuing to work even though the reward may be a long time in coming (delaying gratification)

**Evidence shows that discipline  
accounts for over twice as  
much variation in final grades  
as does IQ, even in college.**

**(Duckworth & Seligman, 2005)**



### 3) Attentional Control

- Being able to concentrate,
- Pay attention, &
- Stay focused

even when the material is boring



**4) Creativity in seeing connections between seemingly unconnected ideas or facts.**

**Playing with information and ideas in your mind, relating one to another, then disassembling those combinations and recombining the elements in new ways.**

**Working memory** involves holding information in mind and working with it.

## 5) Creativity in seeing familiar things in new ways / from different perspectives

If one way of solving a problem isn't working, can we conceive of the problem in a different way?

Can we think outside the box to come up with a different way of attacking the problem?





## 6) Flexibility

- Having the flexibility to take advantage of serendipity
- ...to navigate around unforeseen obstacles, and
- ...to admit you were wrong when you get more information



An example of poor  
cognitive flexibility:

When one door closes, another  
door opens;  
but we often look so long and so  
regretfully upon the closed door,  
that we do not see the ones which  
open for us.

- Alexander Graham Bell

**“Executive Functions”**  
is shorthand for  
all of the abilities  
I just mentioned.



# **‘Executive Functions’**

**are needed whenever going  
‘on automatic’ would be  
insufficient, detrimental, or  
not possible.**



# The 3 core Executive Functions are:

- Inhibitory Control  
(which includes self-control, discipline, & attentional control)
- Working Memory (holding info in mind & MANIPULATING it; essential for reasoning)
- Cognitive Flexibility (including creative problem-solving & flexibility)

## Higher-order Executive Functions are:

- Problem-solving
- Reasoning
- Planning

Inhibition allows us a measure of control over our attention and our actions, rather than simply being controlled *by* external stimuli, our emotions, or old habits of mind or behavior.

Thus it helps make it possible for us to change & to CHOOSE how we react and how we behave rather than being “unthinking” creatures of habit. It doesn’t make overriding habits or automatic responses easy, but it creates the possibility.

Children with better inhibitory control (i.e., children who were more persistent, less impulsive, and had better attention regulation) as adults 30 years later have...

- better health
- higher incomes and better jobs
- fewer run-ins with the law
- a better quality of life (happier)

than those with worse inhibitory control as young children,

controlling for IQ, gender, social class, & home lives & family circumstances growing up across diverse measures of self control.

That's based on a study of 1,000 children born in the same city in the same year followed for 32 years with a 96% retention rate.

by Terrie Moffitt et al. (2011)

*Proceedings of the Nat'l Academy of Sci.*

“Interventions that achieve even small improvements in [inhibitory control] for individuals could shift the entire distribution of outcomes in a salutary direction and yield large improvements in health, wealth, and crime rate for a nation.”



# The 3 core Executive Functions are:

- Inhibitory Control

(which includes self-control & discipline, also selective attention)

- Working Memory (holding info in mind & MANIPULATING it; essential for reasoning)

- Cognitive Flexibility (including creative problem-solving & flexibility)

## Higher-order Executive Functions are:

- Problem-solving
- Reasoning
- Planning

Working memory is critical for making sense of **anything that unfolds over time**, for that always requires holding in mind what happened earlier & relating that to what is happening now.



**I'm a huge fan of Storytelling**





Storytelling requires and invites a child's rapt attention for extended periods (sustained, focused attention), and, **working memory** to hold hold in mind all that has happened thus far, different characters' identities, and to relate that to the new info being revealed - **without visual aids.**



A researcher (Gallets, 2005) randomly assigned children in Kindergarten & Grade 1 to storytelling or story-reading -- 2x a week for 12 weeks.

Recall improved more in the children assigned to storytelling than in children assigned to story-reading.

Children in the storytelling condition recalled more story characters & more story episodes than did children in story-reading.

Maybe one reason is that when you are reading to, or with, a child you are looking down at the page.



But when you are telling a story you are looking directly at the children & interacting more.





**You probably think, “Oh what a lovely scene!”**



I would like to suggest that young children also need this: **STORYTELLING**, where only the teller sees the pages in the book.



Without the visual aids of pictures or puppets, children need to work harder to sustain their attention and to remember the details of the story and who's who in the story.

# The 3 core Executive Functions are:

- Inhibitory Control  
(which includes self-control & discipline, also selective attention)
- Working Memory (holding info in mind & MANIPULATING it; essential for reasoning)
- Cognitive Flexibility (including creative problem-solving & flexibility)

## Higher-order Executive Functions are:

- Problem-solving
- Reasoning
- Planning

For example, try to think of as many uses for a TABLE as you can.

What are all the things you might use a table for?



**You could dance on top of a table.**

**Might turned it on its side and use it to keep a door closed or as a shield against anything being thrown at you.**

**You could get under it to hide or to keep dry.**

**You could cut it up for firewood.**

How can we stop ourselves from get really upset when a child misbehaves? What we usually get upset about is the intent we think is behind an action.

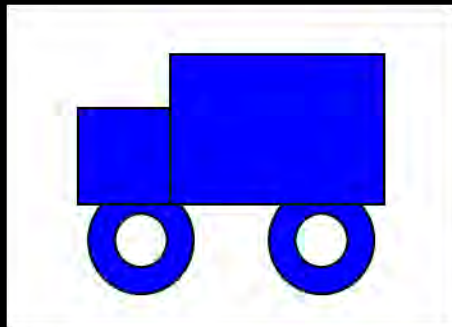
Could use Cognitive Flexibility to re-frame:

A child might be acting in the most awful manner because he has been terribly hurt and is afraid of being hurt again, so he will push you away before you have a chance to reject him or he will test you to see if are *really* someone he can feel safe with.

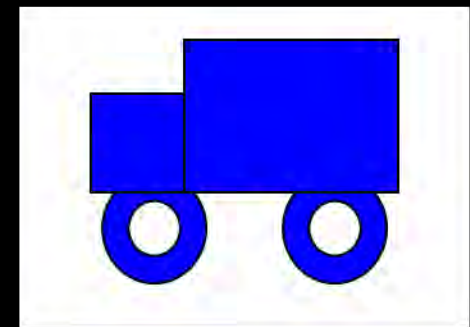
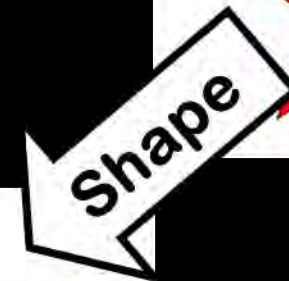
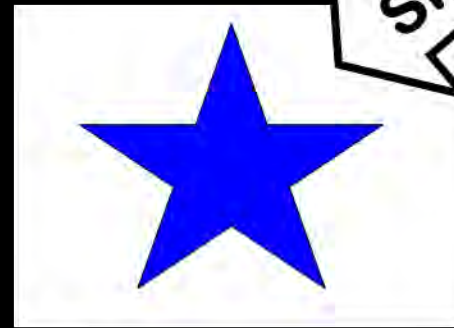
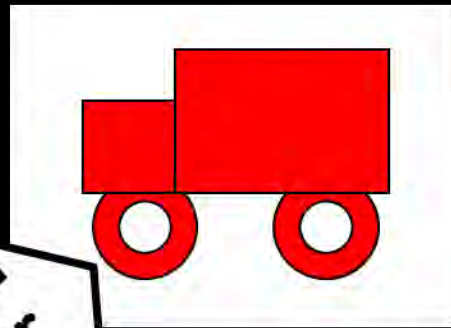
If we see the misbehavior as coming from hurt, we can react completely differently.

# Dimensional Change Card Sort

(Zelazo, Frye, & Rapus, 1996)



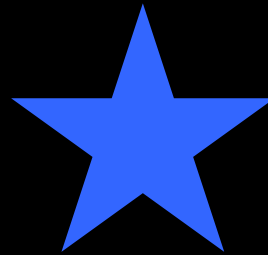
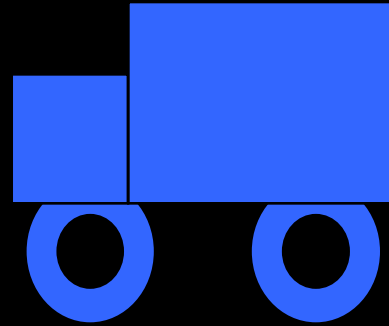
**Target Cards**



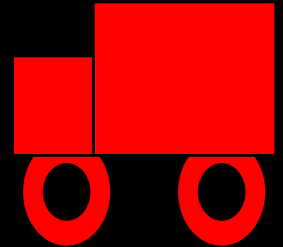
**Holding two rules in  
mind, and inhibiting the  
tendency to continue  
sorting by the first  
dimension**

**When sorting by COLOR,  
Correct Response is the Blue Star.**

**Card to be sorted:**

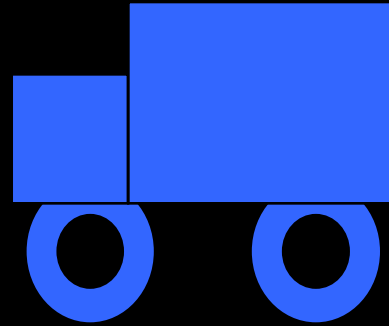


**Model Cards:**

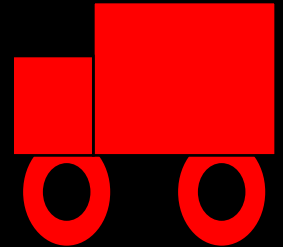
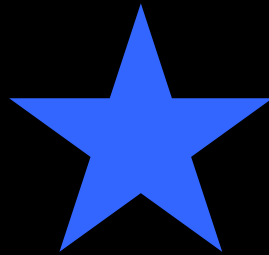


**When sorting by SHAPE,  
Correct Response is the Red Truck.**

**Card to be sorted:**



**Model Cards:**

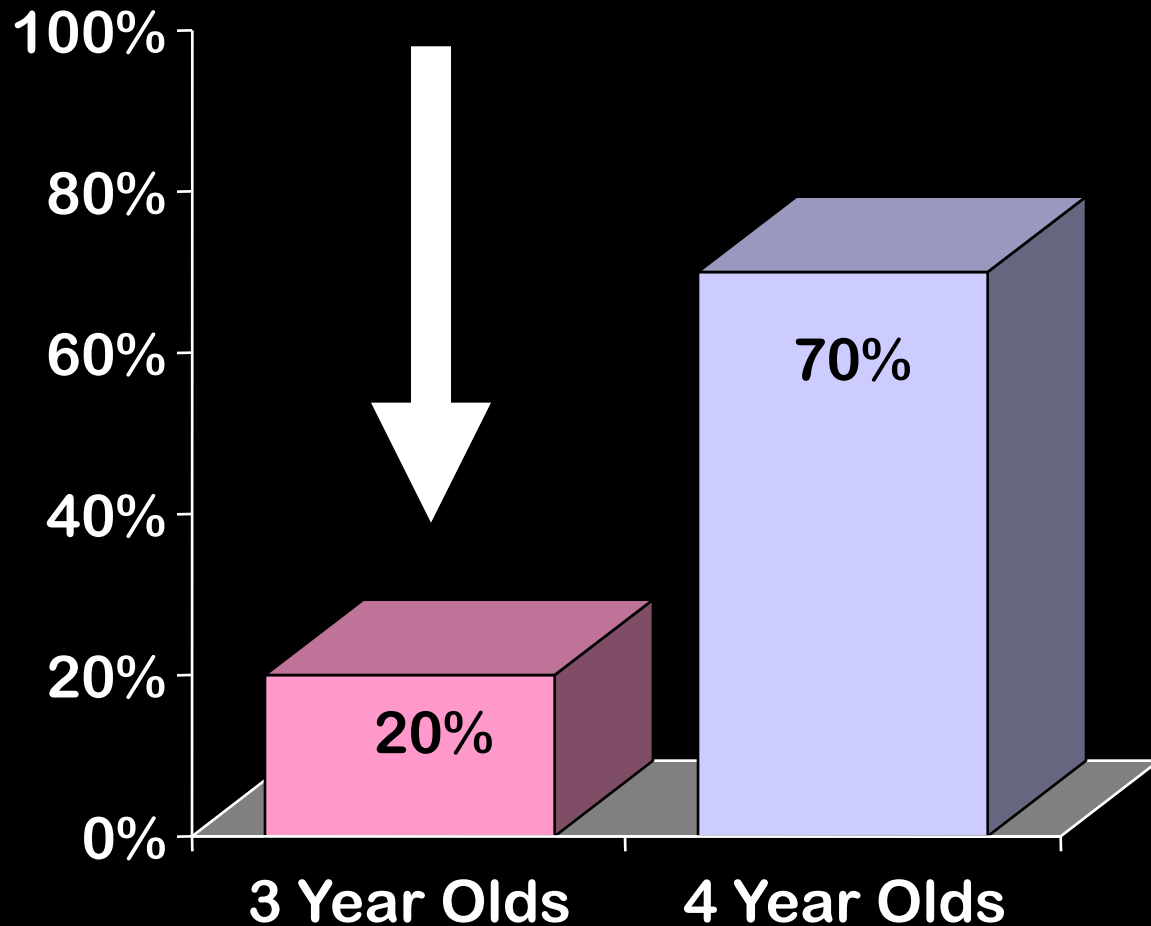




**3-year-olds sort the cards  
perfectly  
by either  
color or shape**

but, very few 3-yr-olds  
can switch how they sort

Percentage of Children who  
Successfully Switch Dimensions



VIDEO

**It is not enough to know  
something or remember it;  
you must get that knowledge  
into your behavior.**



People have assumed that if children knew what they should do, they would do it. (If they did not, they were intentionally misbehaving.)

But, between knowing and implementing, another step, long ignored, is often needed. When there's a strong competing response, that response must be inhibited. Young children may not be able to do that.

## Executive Functions

are important for every aspect of life –  
success in school and in the workplace,  
making & keeping friends,  
marital harmony, and avoiding things like  
unplanned pregnancy, substance abuse, or  
driving fatalities.

Self-control, creativity, reasoning, mental  
flexibility, discipline and perseverance are  
really important – they are often more  
predictive than IQ.

Questions?  
Comments?



**The good news is that  
Executive Functions  
can be improved.**



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There are 3 basic ways to improve functioning that requires EFs:

- (a) **work on EFs** - train them, challenge them, & practice, practice, practice
  - (b) **work on reducing things that impair EFs** (stress, lack of sleep, etc.)
  - (c) **find ways of reducing the demands on EFs** (circumvent the need for EFs, in part) **scaffolding**
-

Many different activities have been shown to improve EFs, including...

computerized training,

games,

aerobics,

traditional martial arts,

yoga,

mindfulness, &

certain school curricula (like Tools of the Mind, Montessori, and PATHS).

# Contrary to influential reviews of the benefits of aerobic exercise....

*Nature Reviews Neuroscience* (January 2008)

“Be Smart, Exercise Your Heart:  
Exercise Effects on Brain and Cognition”  
Charles Hillman, Kirk Erickson & Art Kramer

In particular, the frontal lobe and the executive functions that depend on it show the largest benefit from improved fitness.

The positive effects of aerobic physical activity on cognition and brain function are evident at the molecular, cellular, systems, and behavioral level.

**Exercise without a cognitive component & perhaps without a social component (e.g., riding a stationary bike) produces little or no cognitive benefit.**

Exercise alone appears not to be as effective in improving EFs as exercise-plus-character-development (traditional martial arts) exercise-plus-mindfulness (yoga) and other exercise that requires thought (soccer).

Lakes & Hoyt (2004) randomly assigned children in grades K thru 5 (roughly 5-11 years-old) by homeroom class to Tae-Kwon-Do martial arts (N = 105) or standard physical education (N = 102).

Children assigned to Tae-Kwon-Do showed greater gains than children in standard phys. ed. on all dimensions of EFs studied (e.g., cognitive [focused vs. distractible] and affective [persevere vs. quit] and emotion regulation). This generalized to multiple contexts and was found on multiple measures.

**Traditional martial arts  
emphasize self-control,  
discipline (inhibitory control),  
and character development.**



In a study with adolescent juvenile delinquents (Trulson, 1986), one group was assigned to traditional Tae-Kwon-Do (emphasizing qualities such as respect, humility, responsibility, perseverance, honor as well as physical conditioning). Another group was assigned to modern martial arts (martial arts as a competitive sport).

Those in traditional Tae-Kwon-Do showed less aggression and anxiety and improved in social ability and self-esteem.

Those in modern martial arts showed *more* juvenile delinquency and aggressiveness, and decreased self-esteem and social ability.

Whether EF gains are  
seen depends on the  
**way** an activity is done.



Regardless of the  
program to improve EFs,  
a few principles hold:



1. EF training appears to transfer,  
but the transfer is not wide.

For ex., computerized working  
memory training improves  
working memory but not self-  
control, creativity, or flexibility.

People improve on the skills they practice & that transfers to other contexts where those same skills are needed -- but people only improve on what they practice – improvement does not transfer to other skills.

**To see widespread benefits, diverse skills must be practiced.**

**Because of that, real world activities such as martial arts & certain school curricula (that train diverse executive-function abilities) have shown more widespread cognitive benefits than targeted computerized training.**

**2. EFs need to be continually challenged to see improvements - not just used, but challenged.**

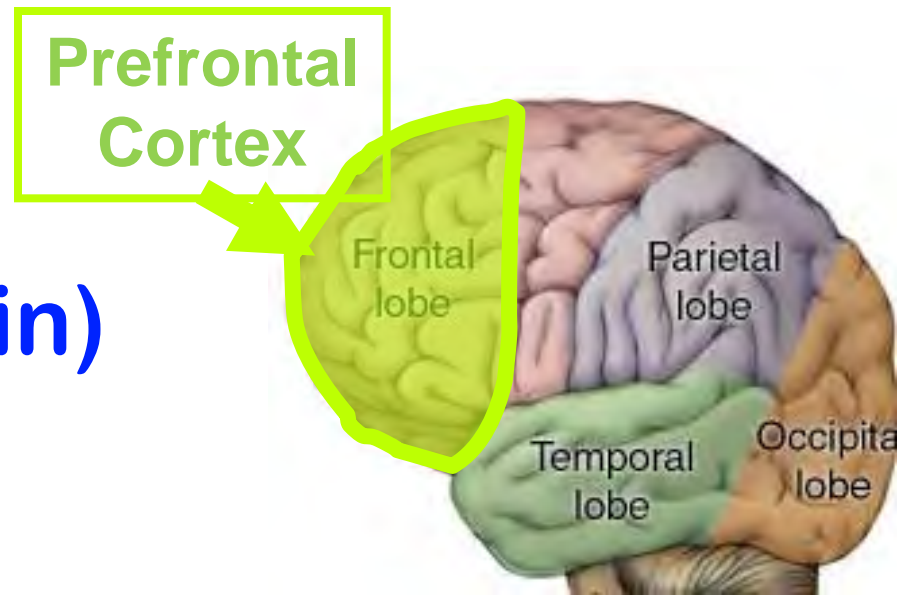


# The Importance of Repeated Practice

Whether EF gains are seen depends on the amount of time spent practicing, working on these skills, pushing oneself to improve.

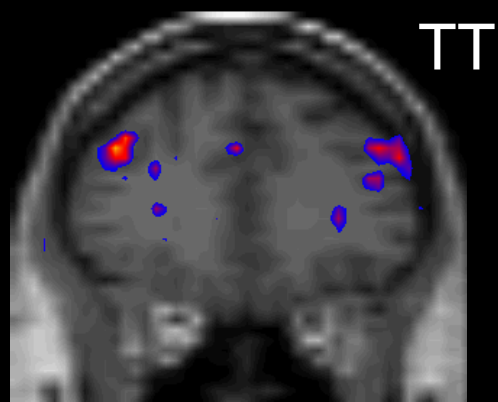
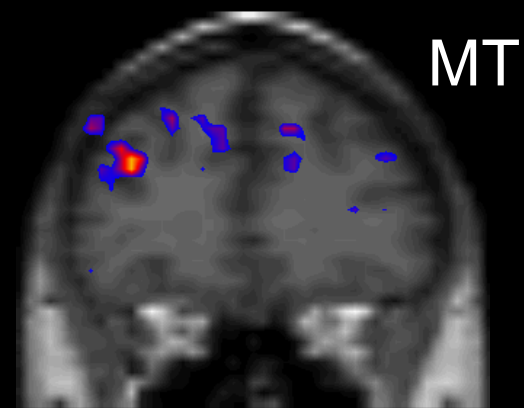
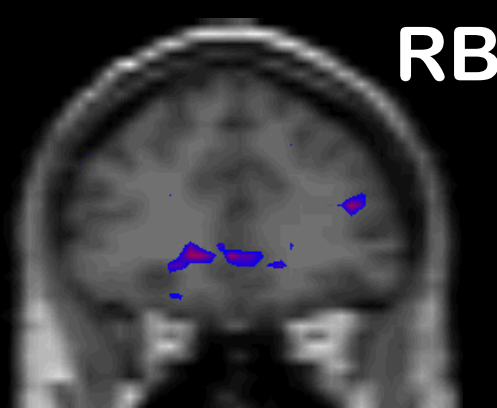
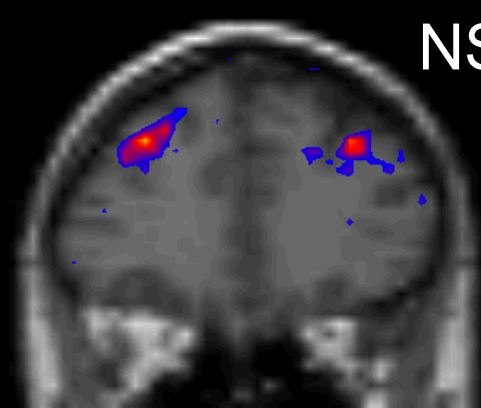
**Executive Functions**  
depend on **Prefrontal**  
**Cortex** and the other  
neural regions with which  
it is interconnected.

Prefrontal cortex  
(what I specialize in)  
is over-rated.

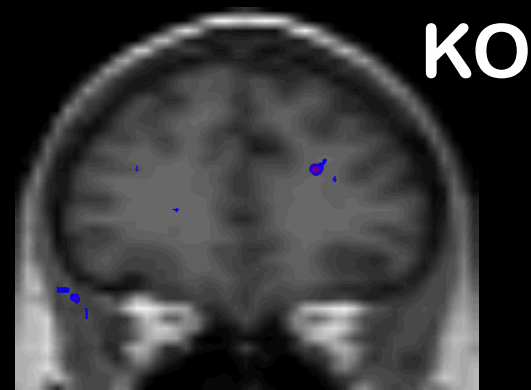
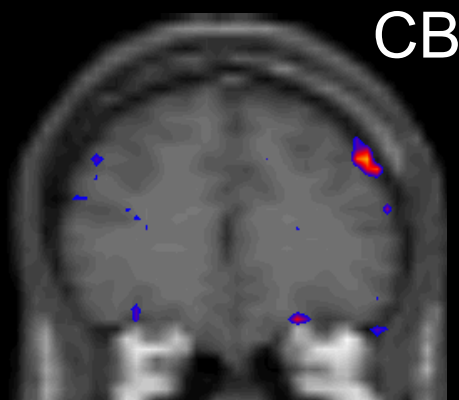
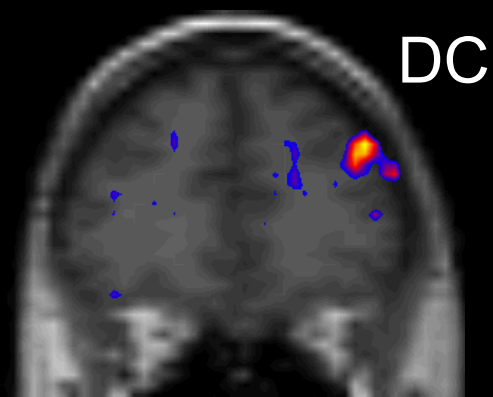
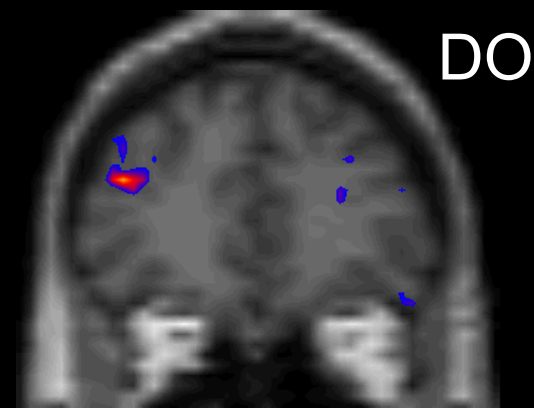


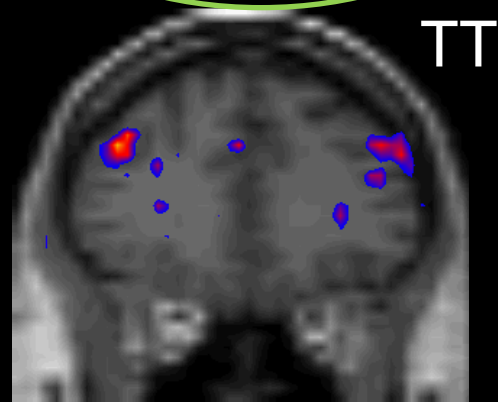
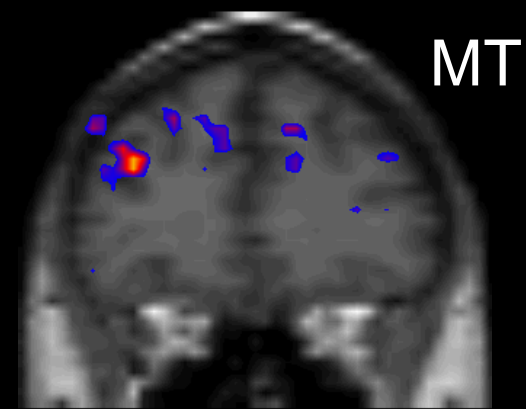
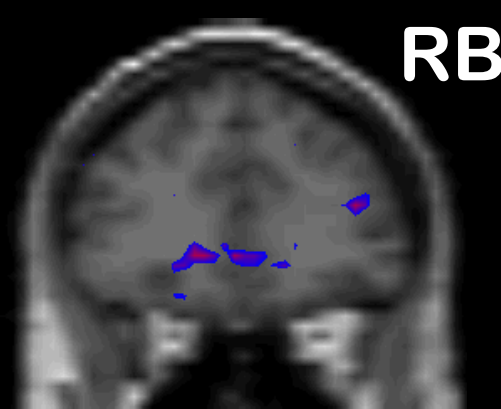
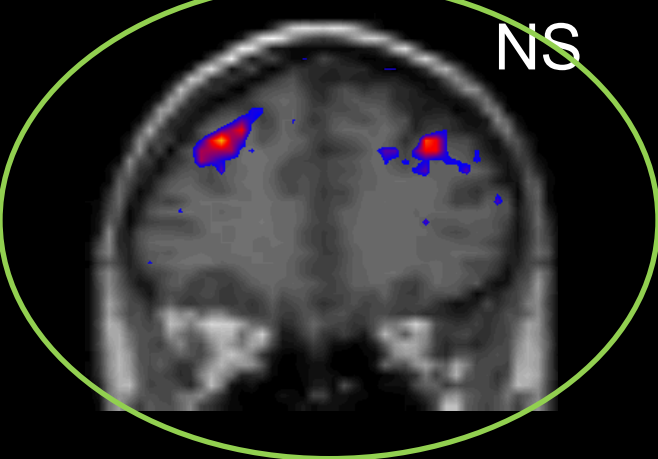
To learn something **new**, we need  
prefrontal cortex.

**But after** something is no longer  
new, persons who perform best  
often recruit prefrontal cortex ***least***.

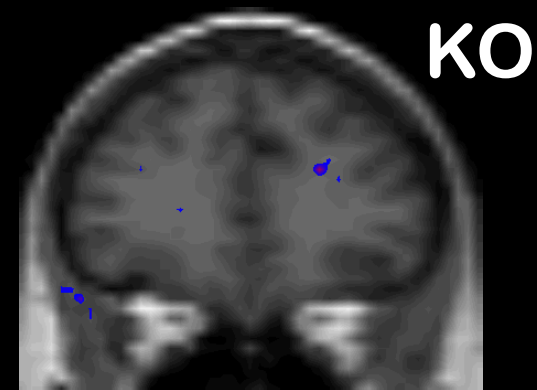
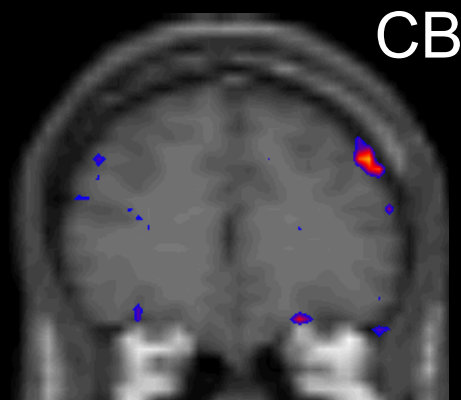
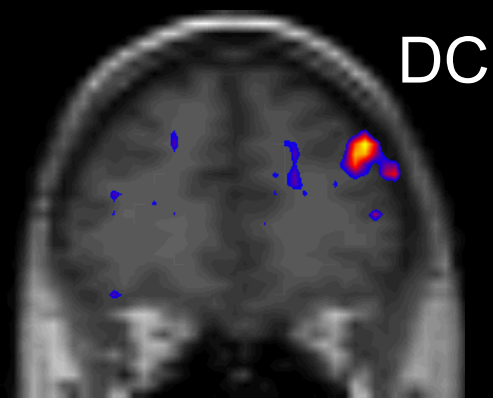
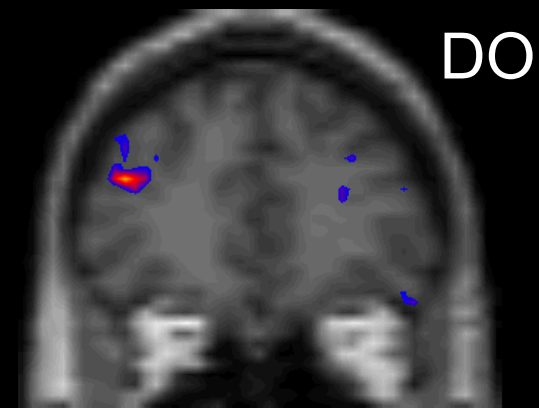


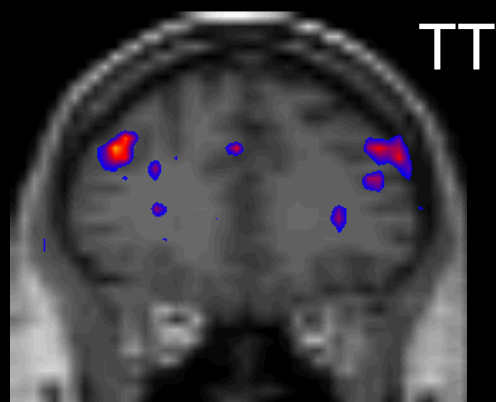
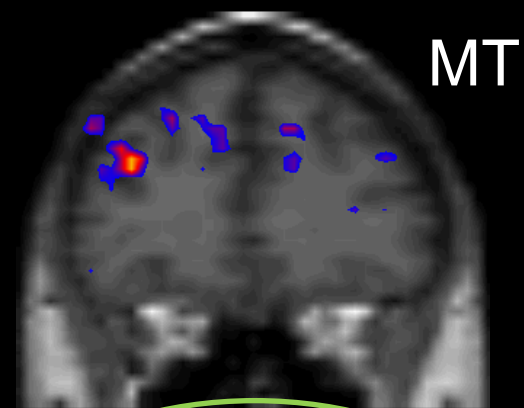
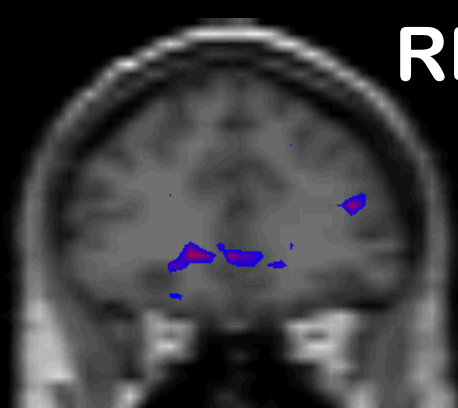
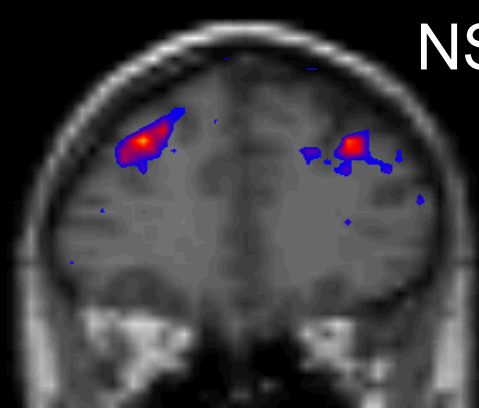
The DLPFC  
Slice for  
8 Individuals



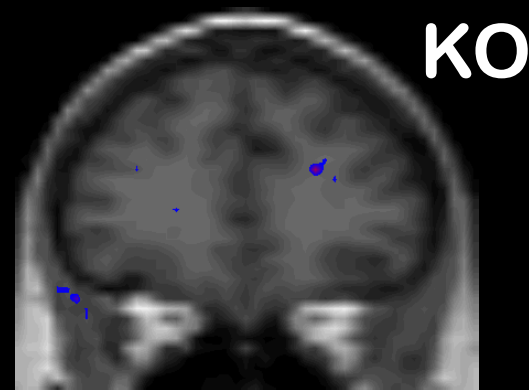
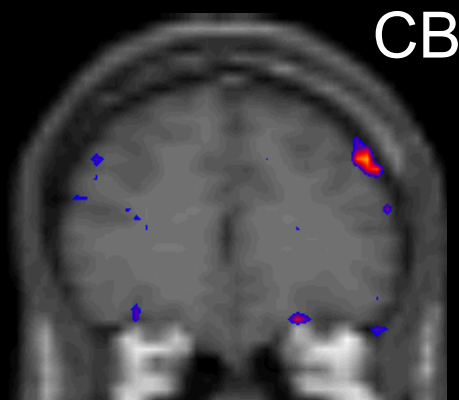
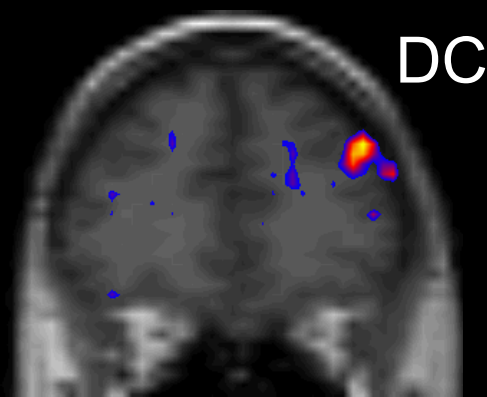
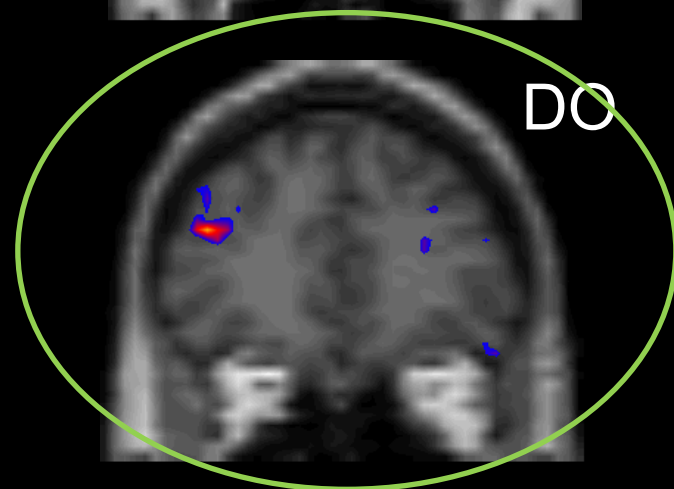


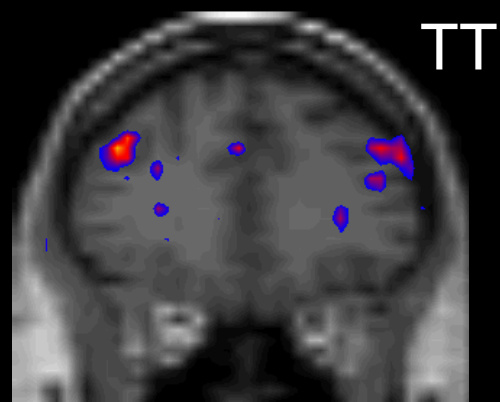
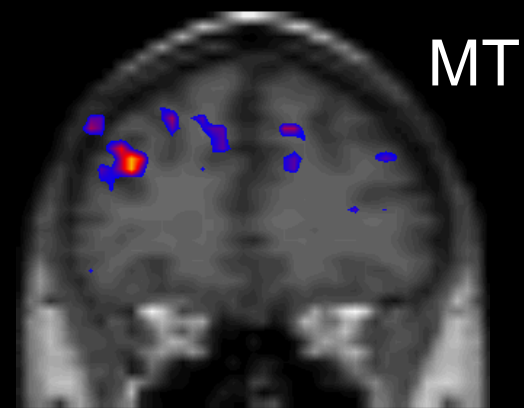
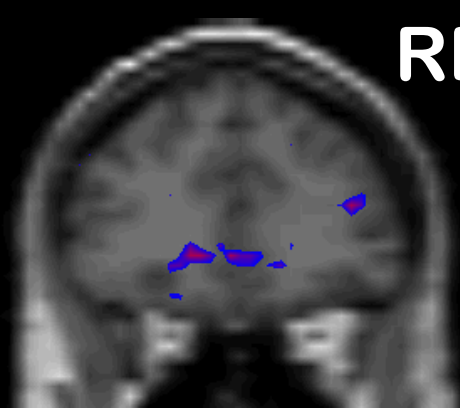
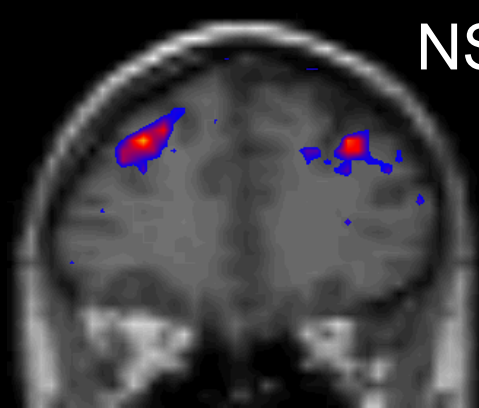
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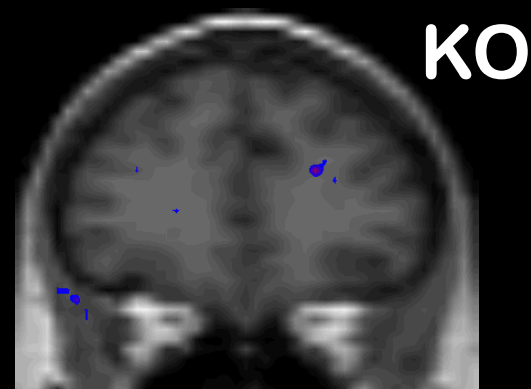
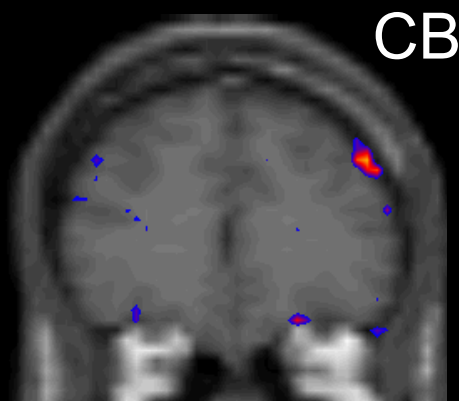
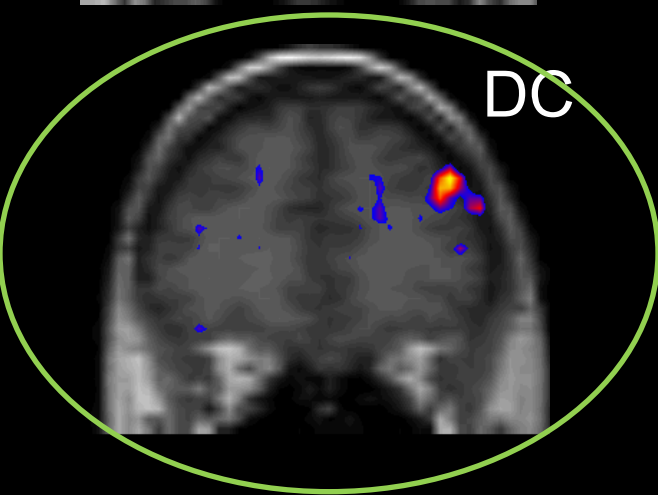
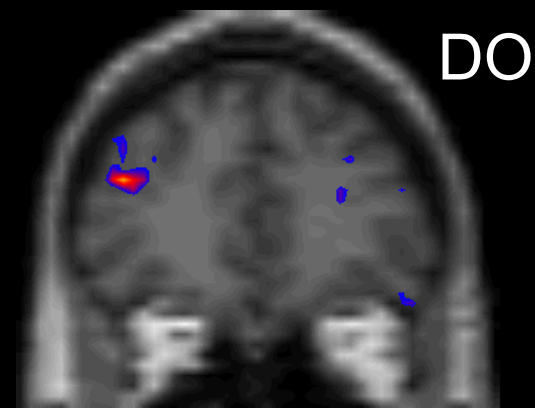


The DLPFC  
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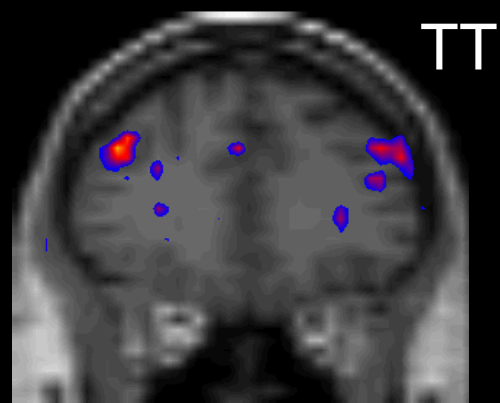
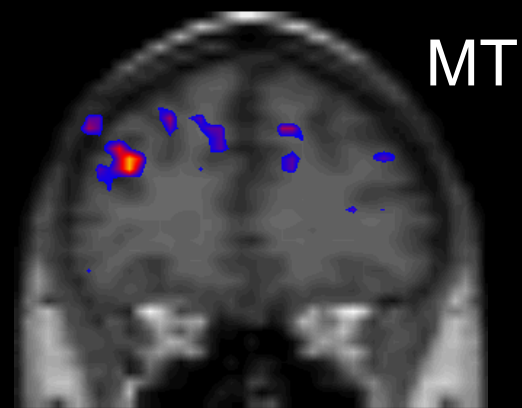
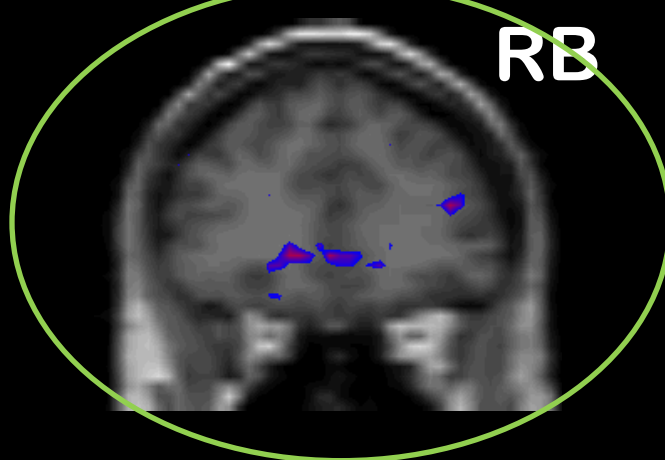
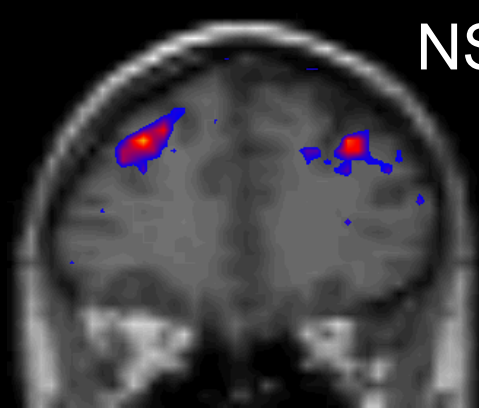




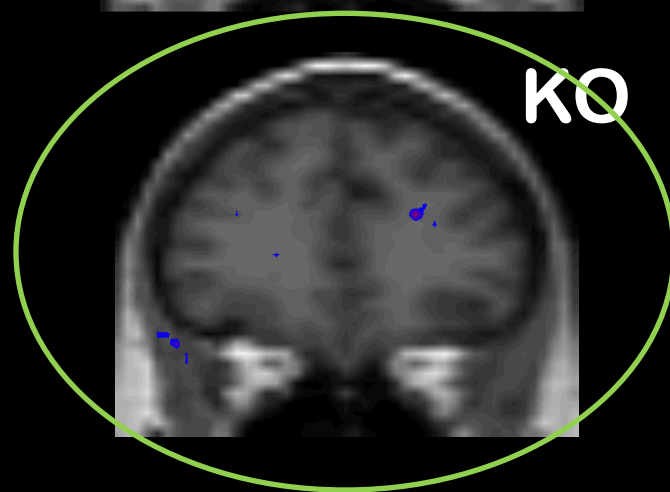
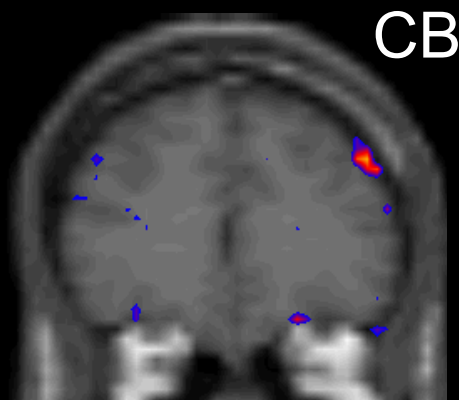
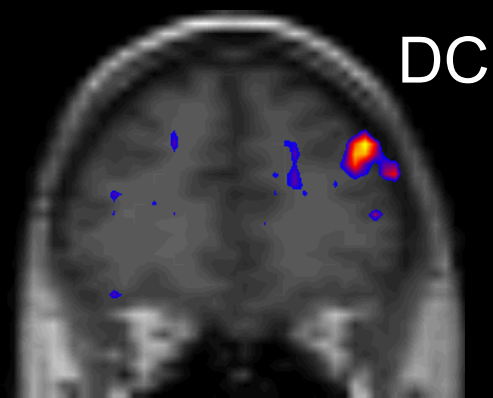
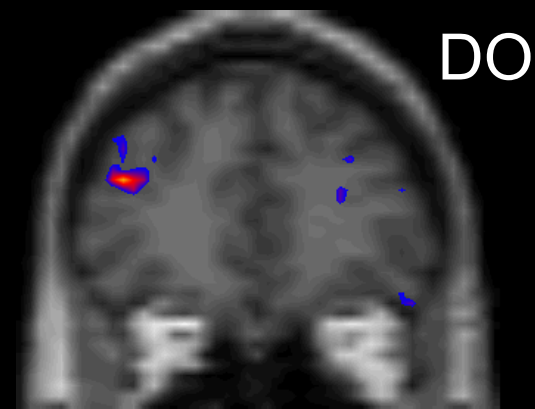
The DLPFC  
Slice for  
8 Individuals







The DLPFC  
Slice for  
8 Individuals





**When something is new, those who recruit PFC most, usually perform best.**

(Duncan & Owen 2000, Poldrack et al. 2005)

**But when you are really good at it, you are NOT using PFC as much.**

(Chein & Schneider 2005, Garavan et al. 2000, Landau et al. 2007, Milham et al. 2003, Miller et al. 2003)

**Want to be able to use PFC whenever you...**

- .. are presented with the unexpected,**
- .. need to think outside the box,**
- .. need to concentrate particularly hard,**
- .. need to adapt to change...**

**BUT**

Want most tasks to be so familiar and well learned that PFC is NOT needed.

Want those tasks to be handed off to older brain regions that have had far longer to perfect their functioning; they can subserve task performance ever so much more efficiently than can PFC.

*(re: Zen and the Art of Archery)*

A child may know intellectually (at the level of PFC) that he should not hit another, but in the heat of the moment if that knowledge has not become automatic (passed on from PFC to older brain regions) the child will hit another (though if asked, he knows he shouldn't do that).

knowing what one should do

vs.

2nd nature (automatic)

(i.e., NOT dependent on PFC)



**The only way something  
becomes automatic  
(becomes passed off from  
PFC) is through action,  
repeated action.**

**Nothing else will do.**

“We are what we repeatedly do.

Excellence, then, is not an act, but a habit.

We don't act rightly because we have virtue or excellence, but we rather have these because we have acted rightly; these virtues are formed in a person by doing the actions;

we are what we repeatedly do.”

Aristotle, *Ethica Nicomachea*, 4th century BC

**How can someone practice  
a skill he or she is not yet  
capable of performing on  
his or her own unaided?**

**The answer: Scaffolds**





**Scaffolds enable children to practice skills they would not otherwise be able to practice.**





# Buddy Reading



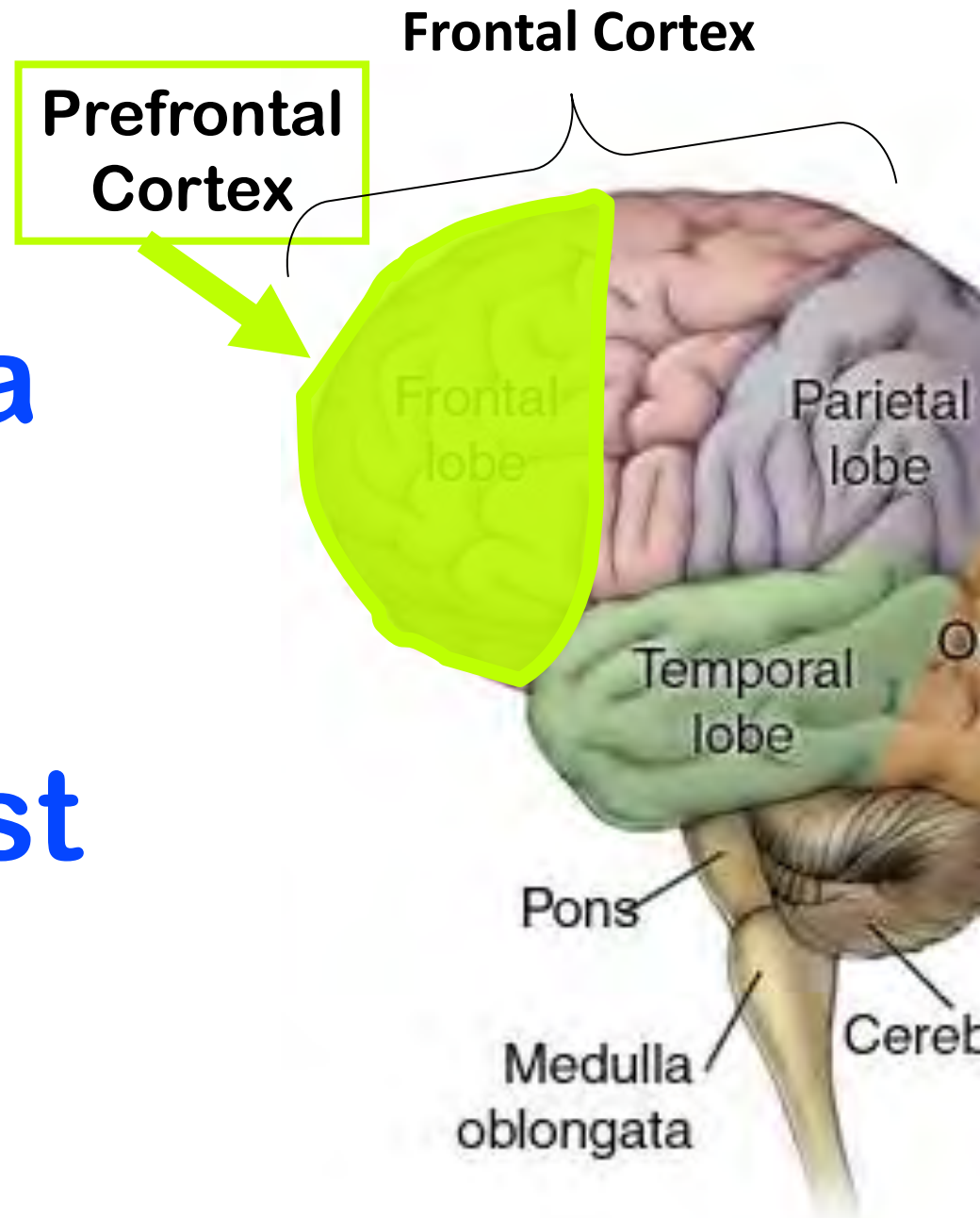
a scaffold



Questions?  
Comments?



**PFC is the  
newest area  
of the brain  
and the most  
vulnerable.**



Nowhere is the importance  
of social, emotional, and  
physical health for cognitive  
health more evident than with  
PFC & EFs.



PFC & EFs are the first to suffer, & suffer most, if we are

- sad or stressed
- lonely
- or not physically fit

Conversely, we show better EFs when we're happy, feel socially supported, & we're physically fit.

Our brains work better  
when we are not in a  
stressed emotional state.

Amy Arnsten, 1998  
The biology of being frazzled  
*Science*

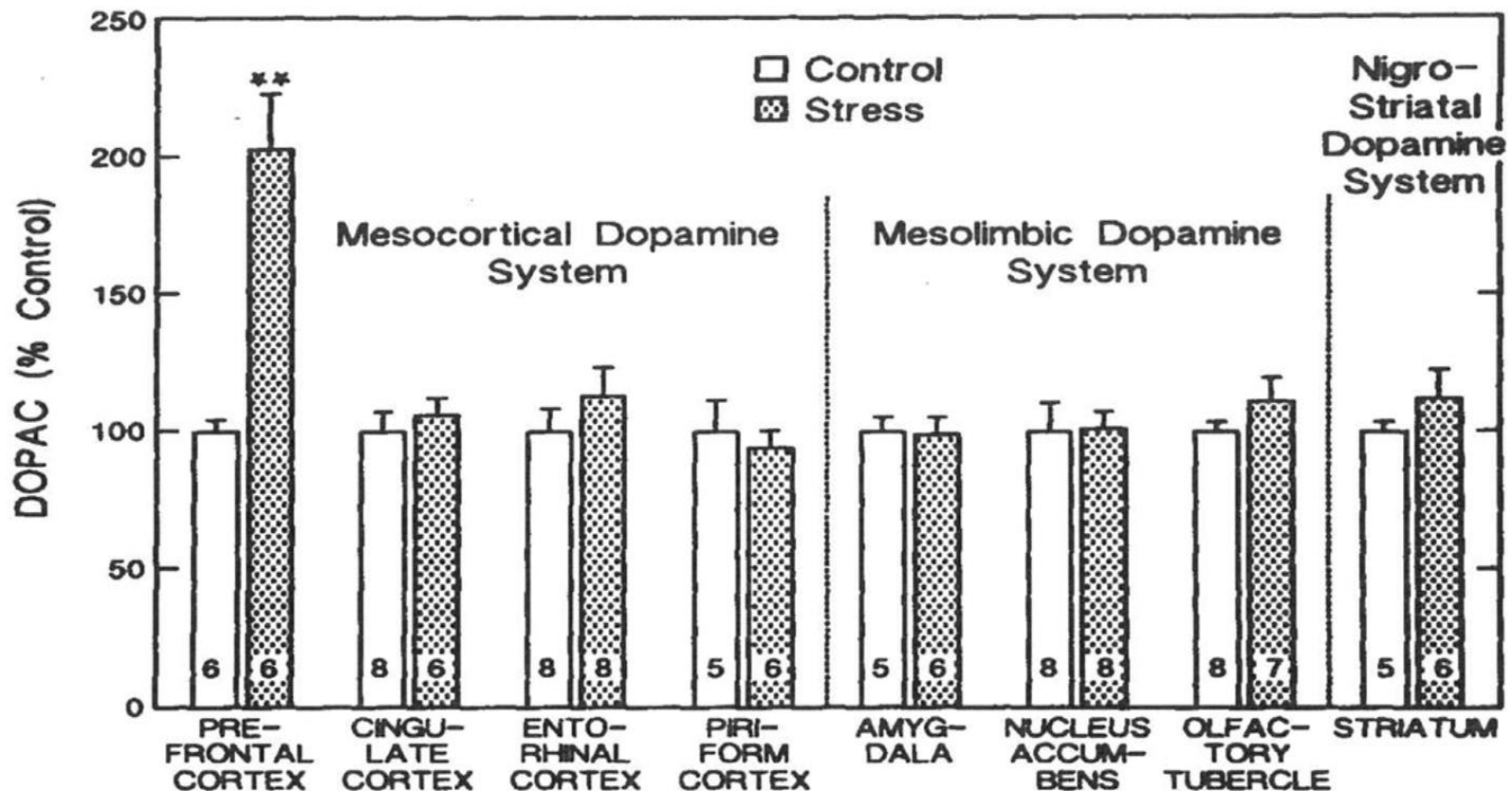
This is *particularly* true for PFC & EFs.



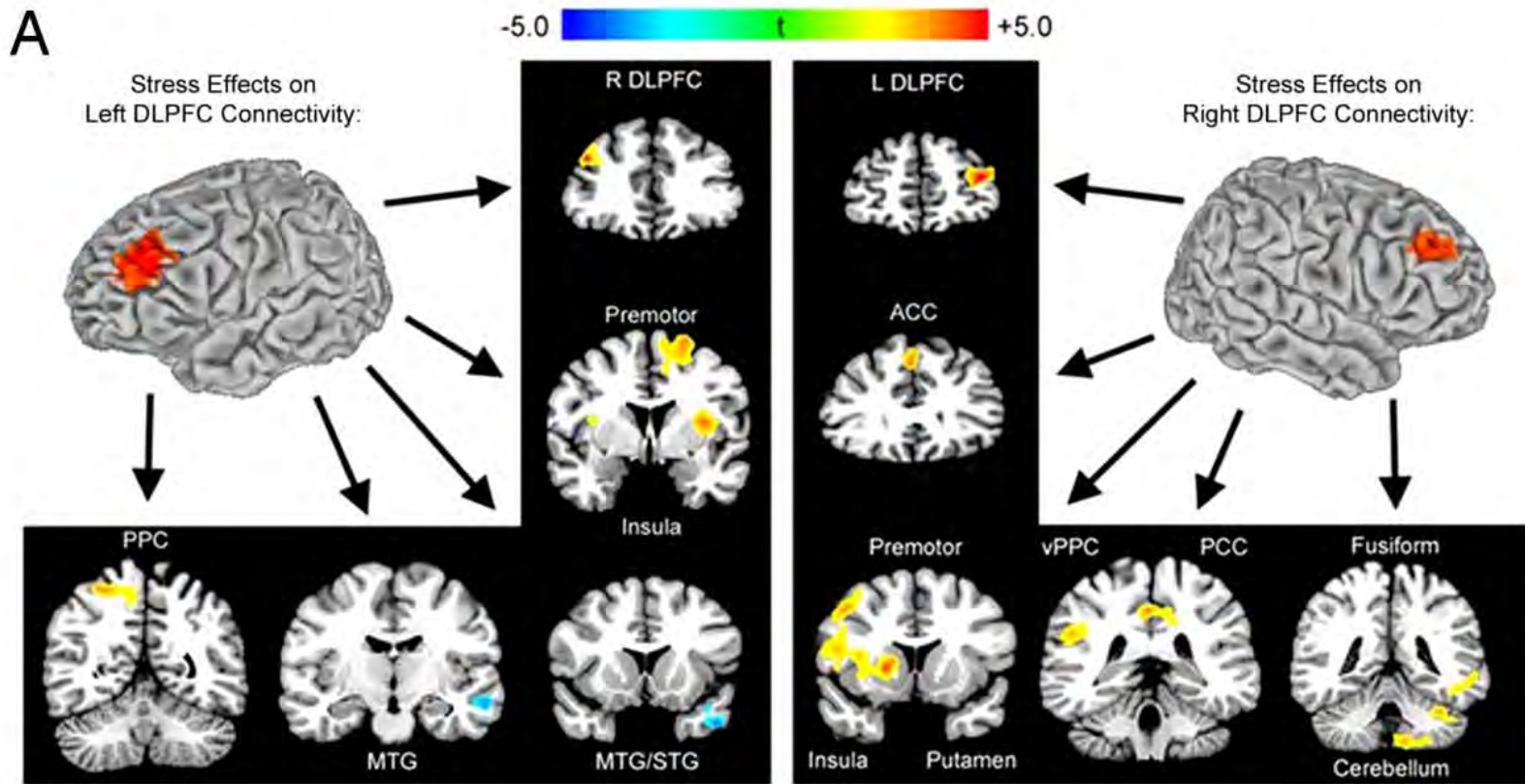
**Stress impairs Executive Functions** and can cause anyone to look as if he or she has an EF impairment (like ADHD) when that's not the case. (You may have noticed that when stressed you cannot think as clearly or exercise as good self-control.)

# Stress and Prefrontal Cortex

Even mild stress increases DA release in PFC but not elsewhere in the brain



(Roth et al., 1988)



**In college students, one month of stress in preparation for a major exam disrupts prefrontal cortex functional connectivity.**

**Stress decreases coupling between left DL-PFC and right DL-PFC, and between DL-PFC and premotor cortex, the ACC, the insula, posterior parietal cortex (PPC), and the cerebellum.**

**Liston et al. (2009) *PNAS***

When we are sad we're worse at filtering out irrelevant information (i.e., worse at selective attention).

Desseilles et al., 2009  
von Hecker & Meiser, 2005

When we are happy we are better at selective attention.

Gable & Harmon-Jones, 2008

# People show more creativity when they are happy

THE most heavily researched predictor of creativity in social psychology is mood.

The most robust finding is that a happy mood leads to greater creativity (Ashby et al. 1999). It enables people to work more flexibly (Murray et al. 1990) & to see potential relatedness among unusual & atypical members of categories (Isen et al. 1985, 1987).

Hirt et al. 2008: 214

It's not that sadder people are less creative than happier ones, but that an individual tends to be more creative when he or she is happier than when he or she is more miserable.

**If you're stressed,  
you can't be the  
parent you want to be.**





If you're stressed,  
your children will pick on it.  
It will cause them to feel  
stressed.

And if they're stressed, their  
EFs will suffer & therefore  
their school performance will  
suffer.



**RELAX**

**You're not perfect.**

**You're going to make  
mistakes.**



And, I can guarantee 100% that  
worrying about whether you're a  
**good enough parent** will NOT  
improve your parenting – it will  
only make it worse.



**Imperfect  $\neq$  Worthless**

Even the people  
you most respect  
make mistakes and  
have done things they regret.

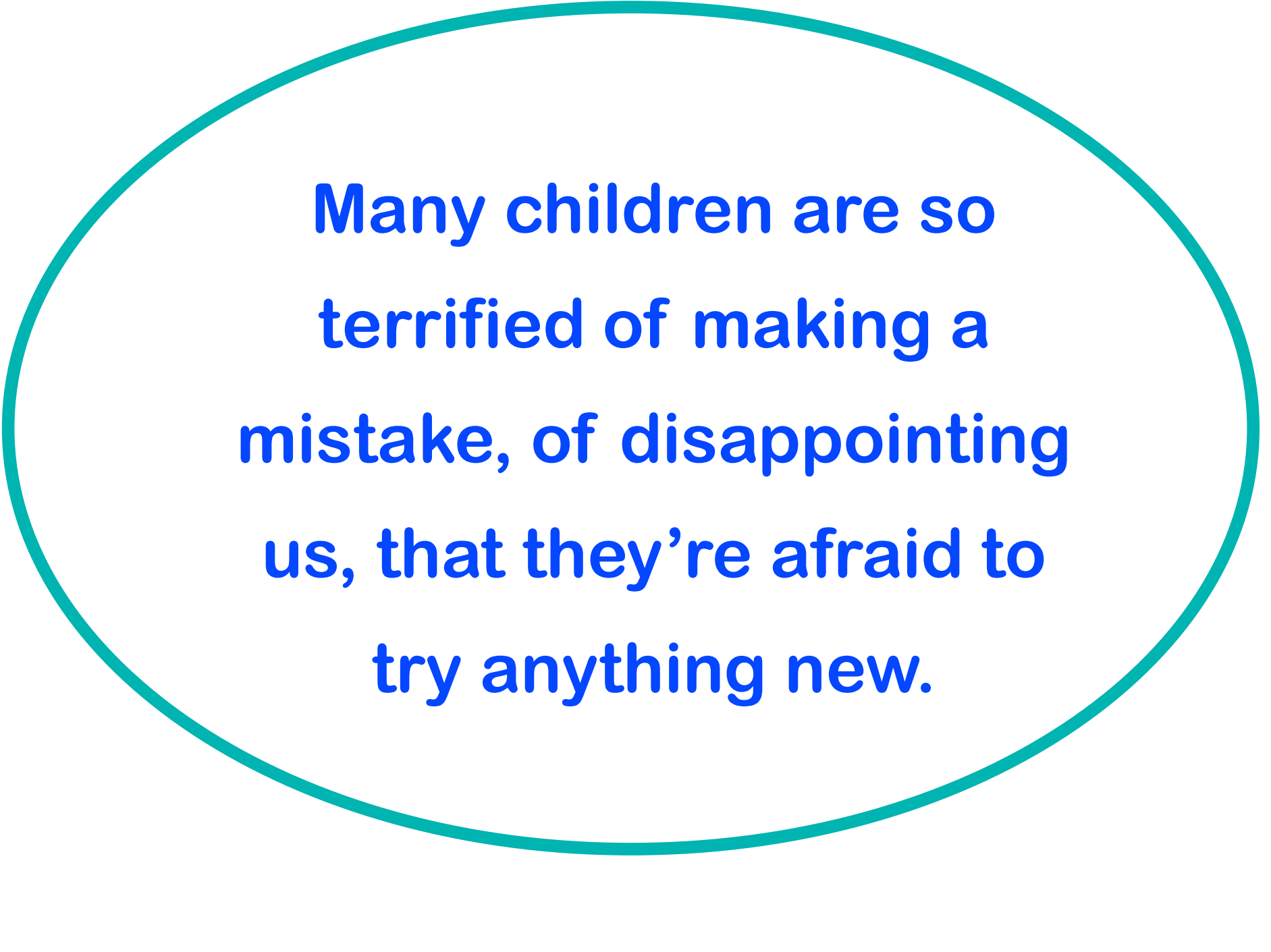
**RELAX.**

**EVERYONE makes mistakes.**

**Everyone is imperfect.**

Yet each of us is wonderful in our own  
way – despite being imperfect.

And you can be a TERRIFIC parent even  
though you aren't the perfect parent.



**Many children are so  
terrified of making a  
mistake, of disappointing  
us, that they're afraid to  
try anything new.**

**Children need to feel safe**

**...to push the limits of what they know,**

**...to venture into the unknown,**

**...to take the risk of making a mistake or of being wrong.**

**The need to know it is okay to make a mistake.**

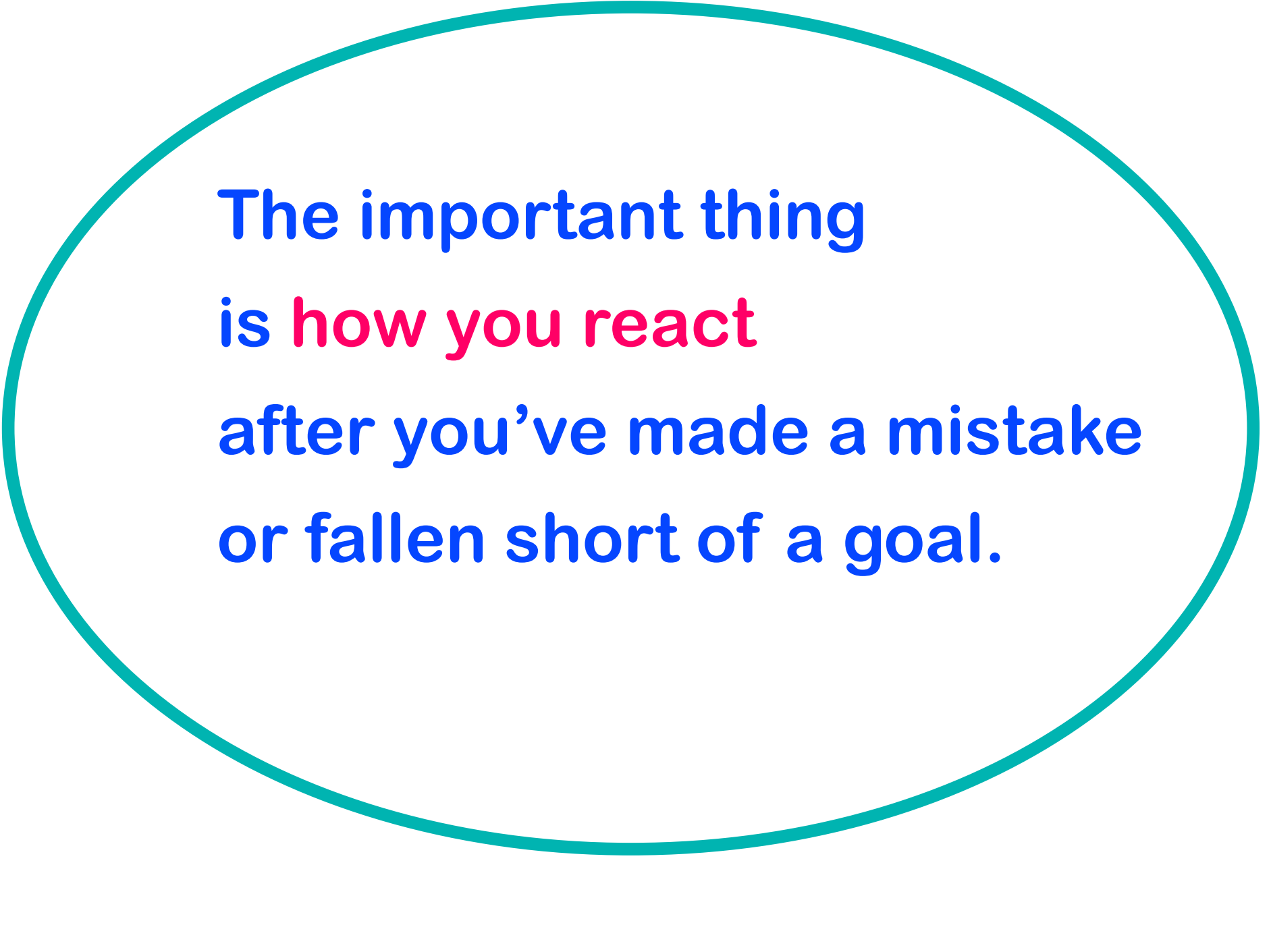
**It's extremely important not to  
embarrass a child.**

**Children can't relax if they're  
worried you might embarrass them.**

We need to let children know  
it's okay to make mistakes;  
**EVERYONE** makes mistakes.

The only alternative is to stay  
with what you already know, to  
stop growing.





The important thing  
is **how you react**  
after you've made a mistake  
or fallen short of a goal.

You've never failed until you've tried for the last time, and you've never lost until you quit.

-- Samuel Proctor Massie



It's never over  
'til it's over

Samuel Proctor Massie was born in the segregated South in the early 1900's. You know he encountered a lot of discrimination, setbacks, and failures. Yet he rose to become one the most highly respected and decorated chemists of the 20<sup>th</sup> century.

**You haven't failed until  
you've stopped trying.**

**We are not just intellects,  
we have emotions  
we have social needs  
& we have bodies**

Our brains work better when we are not feeling lonely or socially isolated.

*Loneliness: Human Nature and the Need for Social Connection*  
2008

a book by John Cacioppo & William Patrick

This is *particularly* true for PFC & EFs.



Roy Baumeister et al. (2002, *Journal of Personality & Social Psychology*) told a

- group of subjects that they'd have close relationships throughout their lives;
- told another group the opposite; &
- told a third group unrelated bad news.

On simple memorization questions (that don't require EFs) the groups were comparable.

On logical reasoning (that requires EFs), those told to expect that they'll be lonely performed worse.

Other researchers haven't tried to manipulate this, but simply give subjects a survey when they come into the lab

& that includes questions like 'Do you feel socially supported? Do they feel lonely?'

One research group (Campbell et al., 2006) found that **prefrontal cortex functioned less efficiently in those who felt lonely or isolated.**

**We are fundamentally social.**

**We need to belong.**

**We need to fit in & be liked.**

**Children who are lonely or ostracized will have more difficulty learning.**



It's not just peers; a close relationship with a caring adult can be huge.



We are not just intellects,  
we have emotions  
we have social needs  
& we have **bodies**





**You need your sleep.**





**Lack of sleep will produce deficits in EF skills, and cause someone to look as if he or she has an EF impairment, like ADHD.**





To the extent that exercise  
alone improves EFs, that  
might be due to...

...exercise improving the  
quantity &/or quality of sleep  
&/or

...exercise improving mood

People who are more physically active, have better aerobic fitness, & better motor coordination, flexibility, and balance show better EF performance

(Bouccard et al., 2012; Scudder et al., 2014; Voelcker-Rehage, Godde, & Staudinger, 2010)

“There is little doubt that leading a sedentary life is bad for our cognitive health.”

That is *particularly* true for PFC & EFs.



The brain doesn't recognize the same sharp division between cognitive and motor function that we impose in our thinking.

The SAME or substantially overlapping brain systems subserve BOTH cognitive and motor function.



For example, the pre-Supplementary Motor Area (SMA) is important for sequential tasks, whether they are sequential motor tasks or sequential numerical, verbal, or spatial cognitive tasks.

Hanakawa et al., 2002



**Motor development and  
cognitive development appear  
to be fundamentally intertwined.**

Diamond, A. (2000)



Close interrelation of  
motor development and cognitive development  
and of the cerebellum and prefrontal cortex.

*Child Development, 71, 44-56*

The different parts of the human being are fundamentally interrelated.

Each part (cognitive, social, emotional, & physical) is affected by, and affects, the other parts.

Diamond, 2000

If we ignore that a child is stressed, lonely, or not healthy because of poor nutrition, lack of sleep or lack of exercise those unmet needs will work against achievement of our academic goals for our children.

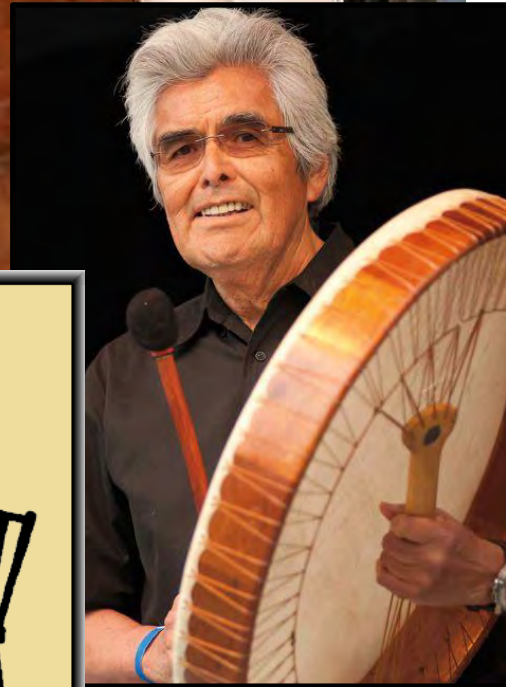
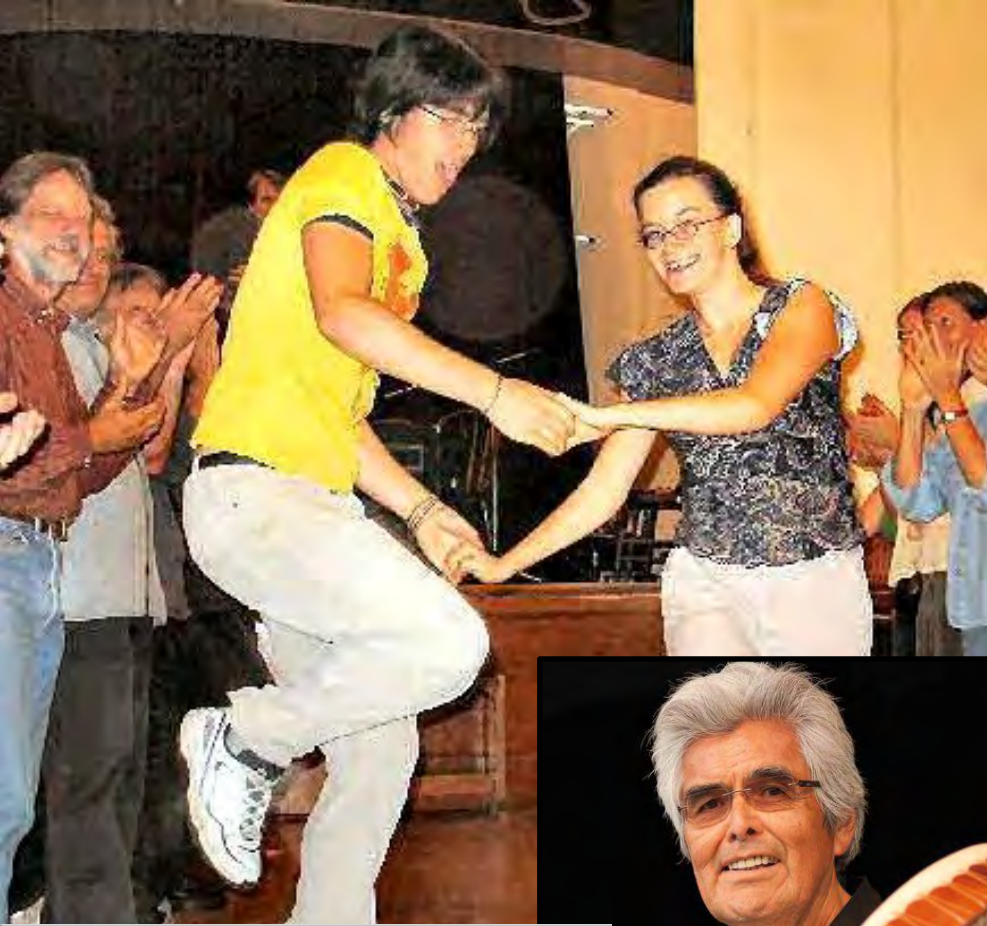
**We need to care about the whole child (cognitive, social, emotional, spiritual & physical) if we want to improve academic achievement.**

**If we focus only on academics, we are less likely to succeed.**

I predict that the activities that should *most successfully* improve EFs not only work on training and improving EFs but also *indirectly support* EFs by lessening things that impair EFs and enhancing things that support EFs.

**What activities directly  
train and challenge  
executive functions and  
indirectly support them by  
also addressing our social,  
emotional, and physical  
needs?**

**Traditional  
Activities that  
have been  
around for  
millennia.**



For 10's of 1,000's of years, across *all* cultures, storytelling, dance, art, music & play have been part of the human condition.

People in *all* cultures made music, sang, danced, did sports, and played games. There are good reasons why those activities have lasted so long and arose everywhere.



**Music-making, dance, and  
playing sports address our  
cognitive,  
emotional,  
social, &  
physical needs.**



---

Because they challenge EFs directly,  
and indirectly support EFs by  
increasing joy,  
a sense of belonging, &  
physical exercise,

I predict they should improve EFs.

---

(and we're hoping to get funding to test my prediction for  
El Sistema Orchestra & for social, communal dance)

# **Jailhouse Rock**

Almost any activity can be the way in, can be the means for disciplining the mind and enhancing resilience.

**MANY** activities not yet studied might well improve EFs.



It all depends on the way the activity is done and the amount of time that is spent doing it, pushing oneself to do better. The most important element is probably that a child really want to do it, so he or she will spend a lot of time at it. It's the discipline, the practice, that produces the benefits.

**Might as well have kids do  
something they can put  
their heart and soul into.**



**Mindfulness →**

**Reducing Stress,  
Feeling more Calm**

**What I'm talking about is also  
increasing JOY !!**







could be caring for an animal....



**Pets teach us about  
gentleness, patience, &  
never holding a grudge**





they provide an opportunity for training children in being caring, nurturing, & responsible



**They provide an opportunity for experiencing the joy of making someone else happy!**



# SERVICE ACTIVITIES

activities where the children are working to help their community or people elsewhere

a goal larger than oneself --

helping children in Haiti, helping a local family whose home burned down, lobbying to get a new playground for the neighborhood

Research shows that brings people the most happiness is not money or creature comforts, but rather feeling that what you are doing has meaning, that it benefits others.

Happiness runs in a circular motion. Often, what makes us happiest is making others happy.

Being kind to others is not only good for others; it is good for the doer -- it is the best route to genuine happiness.

Think of how much joy it give you to see the smile on someone else's face because of something you did.

**More important than service activities helping academic achievement, they are important because of the training they provide in being a good person.**

**There are many things  
one can strive to be  
good at -- the most  
important is to be a  
good person – a  
mensch.**



For children to understand the  
deep truth of:

“if you want to be happy,  
practice compassion”

they need to practice  
compassion and experience for  
themselves the joy it brings them

# The Importance of Repeated Practice

“The act teaches us the  
meaning of the act.”

-Rabbi Abraham Heschel

**If students act as if they are good, they will become good.**

**The way to produce compassionate students is to have them practice compassion day in and day out, throughout every day.**

**If you want to improve mindfulness, practice mindfulness.**

**If you want to improve  
compassion, practice compassion  
(rather than meditating on  
compassion) – especially children.**

# Simple Acts of Kindness EVERY Day

(Joy YOU get when you bring a smile  
to someone else's face)

can be very simple and small acts

say 'thank you' - perhaps to the person who  
hands you your school lunch or the bus driver

hold the door for someone

compliment someone: "great smile"; "I like your shirt"

offer your seat to an older person

help someone carry a heavy load

let someone else play with the toy you wanted

comfort someone who's upset

ask someone sitting on the sidelines to join in your game

Because

“We preserve memory through story....  
You are what you remember, and what  
you remember are stories.

By remembering and retelling tales of  
[your] kindness, you create a self that is  
loving and kind.”

-- Rabbi Rami Shapiro

The Sacred Art of Lovingkindness

Each day, students should write down the nice things they have done in a private journal (not to hand in for praise or reward).

Each week they should write down the one nice thing they did that gave them the most joy, and hand that into the teacher.

# Parents & Teachers are Role Models

Values cannot be taught, but they can be emulated.

If we preach kindness but do not practice it, our words will have little effect.

“You can’t teach compassion; you are the teacher, you must be compassion” --- the Dalai Lama



**Children learn what they live**

**They see what gets  
rewarded**

**They see what their  
community values**

**Children see who people look up to. They see who gets praised and held up as role models.**

**If we want children to grow up to be compassionate and civic-minded, they need to see concretely that that is valued.**

We give awards for the Best Scholar and the Best Athlete, but too rarely for the Most Selfless Student.

They see teachers getting evaluated by the academic test scores of their students, not by the humanity or kindness of their students.

We need to regularly recognize students for doing good deeds, for taking the initiative to help at a local or global level. We need to regularly recognize school personnel

(*all* school personnel, including the janitor, cook, librarian, etc.) for best personifying the human values we hope our students will adopt.

It is not that one should do the right thing *in order* to get a reward, or that every good deed should get rewarded, but students should see very concretely that it is at least as important to be a good person as it is to be bright or athletic.

And so I've now come full  
circle back to the spirit vs.  
the technique:

Our humanity is more  
important than our  
knowledge or skill or doing  
the textbook-perfect thing.

**Our caring -- our openness, our willingness to truly listen; being there for a child when he or she needs us - is more important than our knowledge or skill.**

**Mindful Listening means** staying fully in the present moment, giving the speaker your full, undivided attention.

**That's not so easy.**

To do that you need to set aside your own worries and preoccupations, thinking about what you need to do next, even trying to anticipate where the speaker's train of thought is going or whether you are sufficiently in tune with the speaker.

**Listening with your heart as well as your head -- listening not just to the words but to what's unspoken.**

It's not easy, but it is so worth it:

“The greatest gift  
I can conceive of  
having  
from anyone  
is  
to be seen by them,  
heard by them,  
to be understood.”

-- Virginia Satir





**It's so powerful to be heard /  
seen for who you really are –  
and to be liked anyway**



**“Perhaps the most important thing we ever give each other is our attention. And especially if it's given from the heart...”**

**“Listening is the oldest and perhaps the most powerful tool of healing.”**

**-- Dr. Rachel Naomi Remen**

*thank you for  
your attention*



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# Life and Learning can be Joyous!

Kids can have a great time  
- and at the same time  
learn more and do better!



**JOY** is NOT the  
opposite of **SERIOUS**

Serious business (like  
learning) can be JOYFUL

The practices, the rituals, of Buddhism, Judaism, or Christianity are meant to be the means to an end:

for us to be better human beings,

for us to act better toward other human beings and all of creation,

for us to find peace and genuine fulfillment in our own lives.

The practices themselves should not be reified and allowed to become divorced from what they are intended to achieve.

The difference between an ordeal and an adventure is your attitude.

“The world we have created is a product of our thinking. If we want to change the world, we have to change our thinking.” -

- Albert Einstein

You may be a dunce in one environment, but a genius in another.

You may not be able to grasp something when it is presented one way, but it may be easy for you if it's presented another way.