

# Disparities in School Readiness: The Dallas Preschool Readiness Project

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# Dallas Preschool Readiness Project

Funded by the *Eunice Kennedy Shriver* National Institute of Child Health and Development

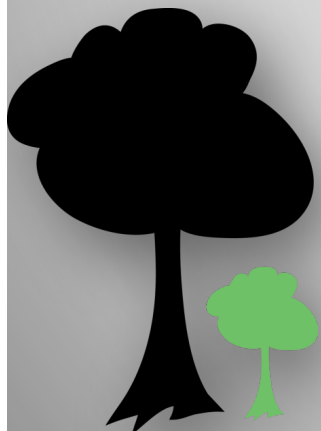
- 407 preschoolers enrolled at age 2½ years
  - 183 African American, 224 Latino
  - Average family income: 82% FPL (54.5% of African American and 14.8% of Latino families < 50% FPL)
  - 14.8% of African American and 42.8% of Latino caregivers had less than a high school education
  - 73% of Latino caregivers foreign-born; 75% Spanish-speaking
- 366 followed up at age 3½ years (90% follow up rate)
- ~333 followed up at kindergarten (91% follow-up of those seen at Time 2; 82% of those enrolled in the study)



# Dallas Preschool Readiness Project

## Measures

- Self regulation/executive function
- Parent-child interaction (mother-child and father-child)
- Family/household characteristics
- School readiness (T1-T2)
  - Child behavior problems (T1 and T2)
  - Child language (T2)
  - Pre-academic skills (T2)
- School achievement (T3-T4)
  - Woodcock-Johnson
  - Receptive One-Word Picture Vocabulary test
  - Teacher report



Inhibition

**=** *The ability to ignore distraction and stay focused, and to resist making one response and instead make another*

*The ability to hold information in mind and manipulate it*

**=**



EF

*The ability to flexibility switch perspectives or focus of attention*

**=**

Working  
memory

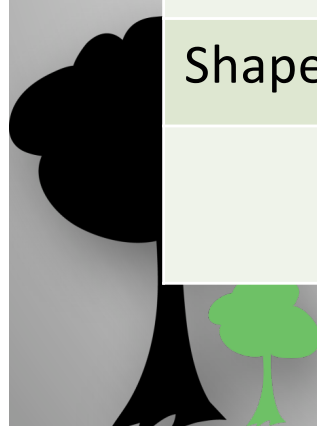


Cognitive  
flexibility

Diamond, A. (2006). The early development of executive functions. In E. Bialystok & F. I. M. Craik (Eds.), *Lifespan cognition: Mechanisms of change* (pp. 70-95). New York: Oxford University Press.

# Self Regulation & Executive Function Tasks at 4 Ages

2½ years	3½ years	Kindergarten	1 <sup>st</sup> Grade
Snack Delay	Snack Delay	DOG	HTKS
Wrapped Gift/ Wait for Bow	Wrapped Gift/ Wait for Bow	Wrapped Gift/ Disappointing Gift	DCCS
Forbidden Toy	Mommy & Me	HTKS	Hearts & Flowers
Mommy & Me	Heads & Toes	DCCS	Self-ordered pointing
Shape Stroop	DCCS	Operation Span	
	Memory Chocolates		



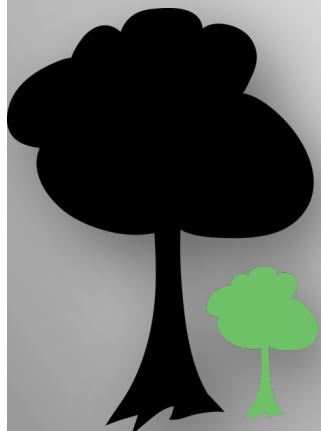
# Snack Delay

- Child told not to touch M&M until bell rings
- 4 trials (10s, 20s, 30s, 15s)
- Latency to touch/eat coded



# Wrapped Gift/Wait for Bow

- Package wrapped with child's back turned
  - Latency to peek coded
- Child left with package while researcher retrieves bow
  - Latency to touch, lift, and open coded



# Forbidden Toy

- Mutual play with Shake 'n Go racer
- Child left with toy while researcher leaves room
- Latency to touch coded



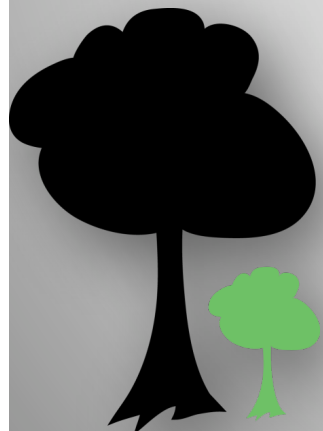


# Shape Stroop and Mommy & Me

*"Show me the baby grapes"*



**Mommy & Me**



**Dallas Preschool  
Readiness Project**

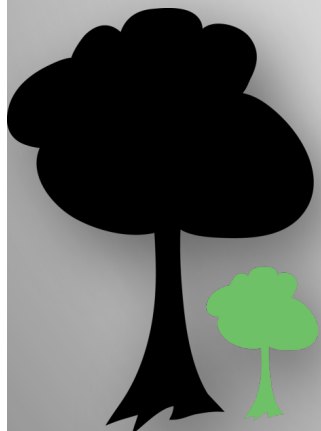
# Heads, Toes, Knees & Shoulders



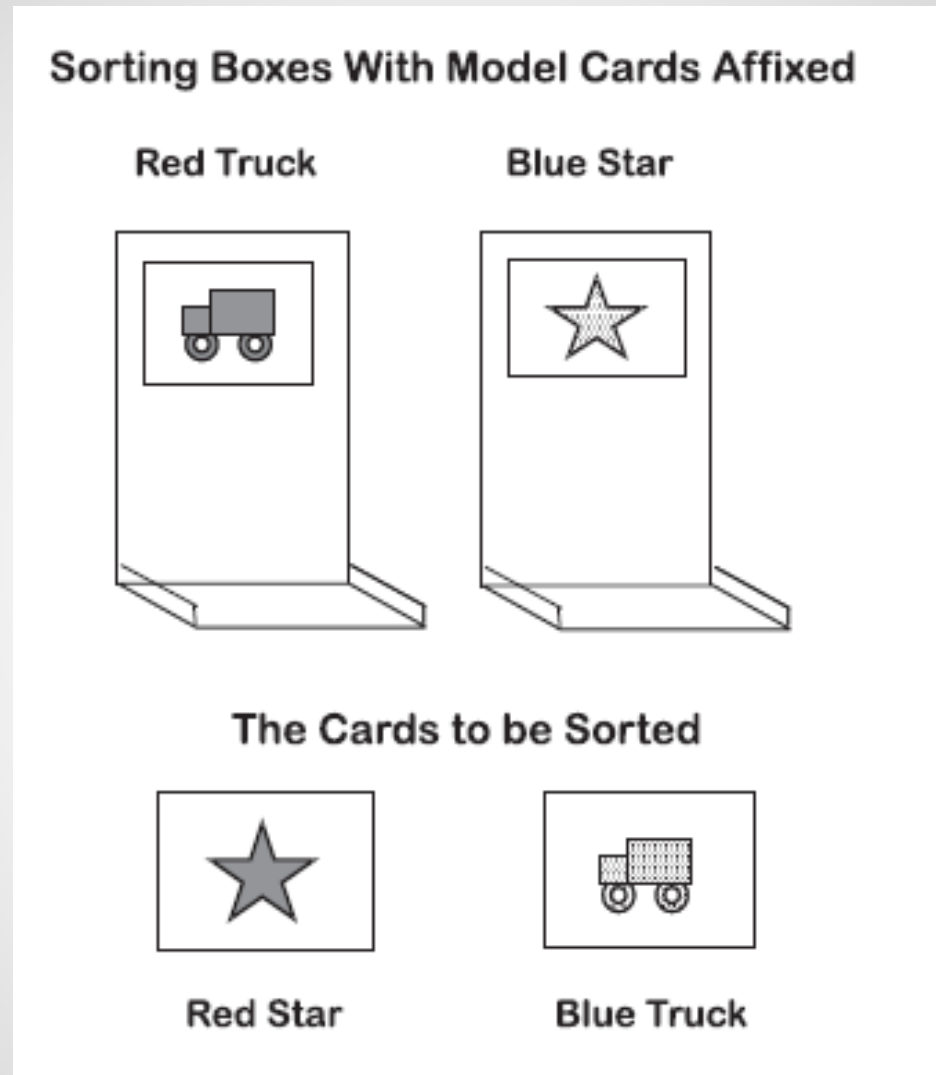
Child must do opposite of what researcher does

Ponitz et al., (2008). Touch your toes! Developing a direct measure of behavioral regulation in early childhood. *Early Childhood Research Quarterly*, 23, 141-158.

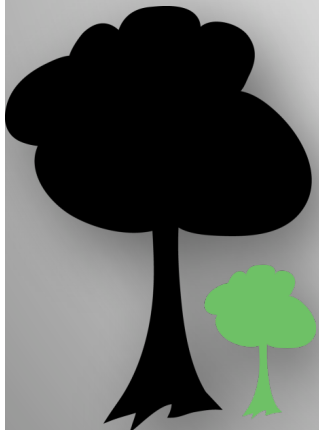
Ponitz et al., (2009). A structured observation of behavioral self-regulation and its contribution to kindergarten outcomes. *Developmental Psychology*, 45(3), 605-619.



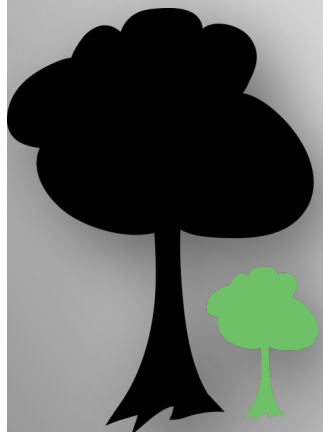
# Dimensional Change Card Sort



Diamond, A., Carlson, S. M., & Beck, D. M. (2005). Task switching on the dimensional change card sort task: Separating the dimensions aids the ability to switch. *Developmental Neuropsychology*, 28, 689-729.

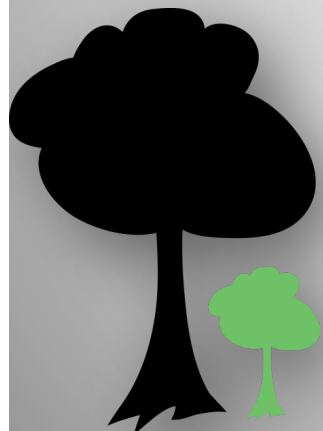


# Memory Chocolates (working memory)



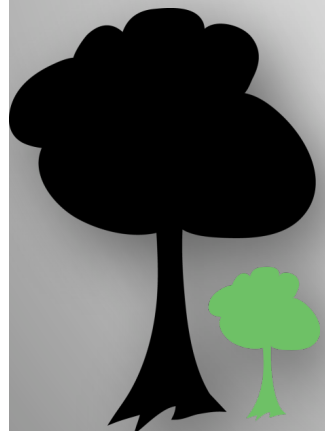
# Delay of Gratification

- Child shown small and large amounts of a treat
- Told if they can wait entire time (7 minutes), they will get larger amount
- They can ring bell if they can't wait, and they will get smaller amount

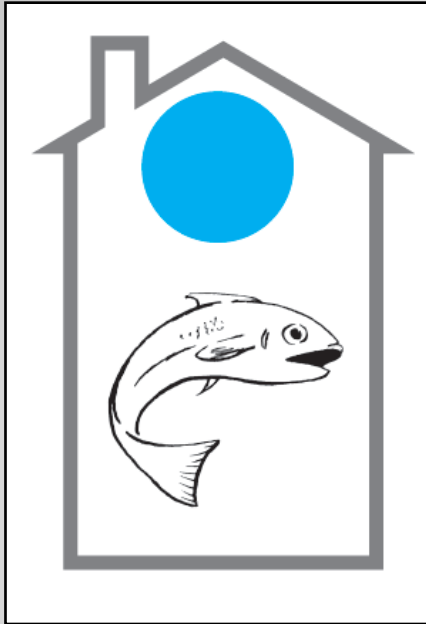


# Disappointing Gift

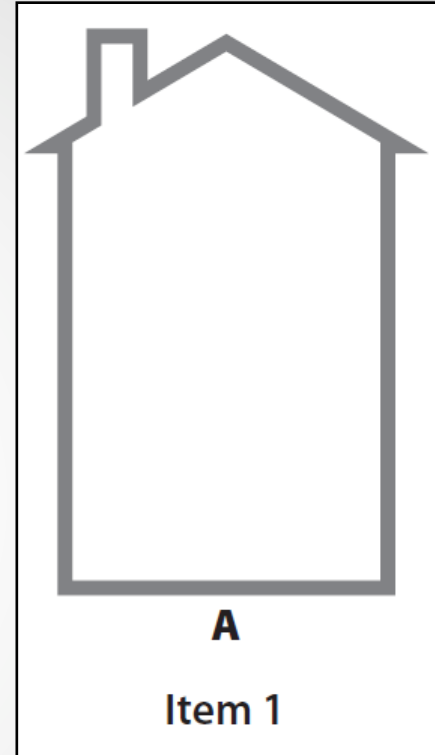
- Wrapped gift is something child wouldn't like (chip of wood)
- Child's emotional regulation in response to disappointing gift is recorded and coded



# Operation Span



What color is in this house? That's right. It's *blue*. What animal is in this house? That's right. It's a *fish*.

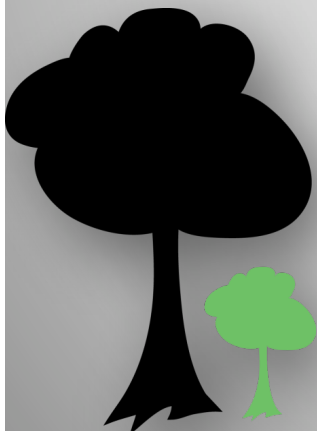


[Count silently to yourself for two seconds.]

Item	Say	Do
Item 1	What animal was in this house?	Point to House A. Correct as needed.





Now you are going to play on your own. I will show you lots of houses that have animals and colors. I want you to help me remember what *animal* was in *each* house.

Blair, C.B., & Willoughby, M.T. (2006). Measuring Executive Function in Young Children: Operation Span. Chapel Hill, NC: The Pennsylvania State University and The University of North Carolina at Chapel Hill.



# Hearts & Flowers

**HEARTS & FLOWERS**

Congruent	Incongruent
 Push Left	 Push Right
 Push Right	 Push Left

Press Return

## HEARTS - CONGRUENT

Each time you see a HEART, press with the thumb or forefinger on the *SAME* side as the stimulus.

For example, if the heart appears on the left, press with your left hand.

Remember:

PRESS ON THE SAME SIDE AS THE HEART

Press Return

## FLOWERS - INCONGRUENT

Now you'll see a flower. Press on the side *OPPOSITE* the flower.

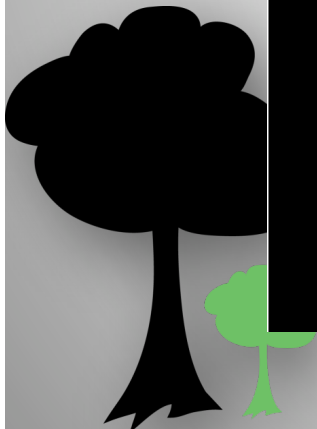
For example, if a flower appears on the left, press with your right hand.

(Here, you'll need to inhibit on every trial the natural tendency to respond on the same side as the stimulus)

Remember:

PRESS ON THE SIDE OPPOSITE THE FLOWER

Press Return





# Self-Ordered Pointing

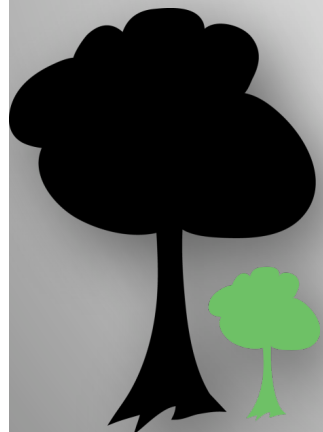
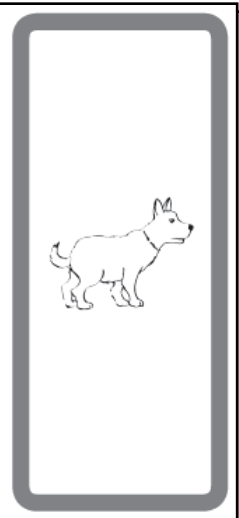
Now you try. Here is a page with a dog and a flower again. Touch one of these pictures.

[Wait two seconds. If the child does not touch a picture, prompt him or her to do so.]



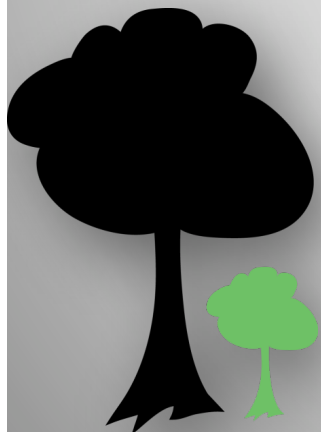
Now touch a picture that is *not* the same as the one you touched before, so that all the pictures get a turn.

[Praise child if he or she chooses the other picture correctly, or correct the child as needed.]



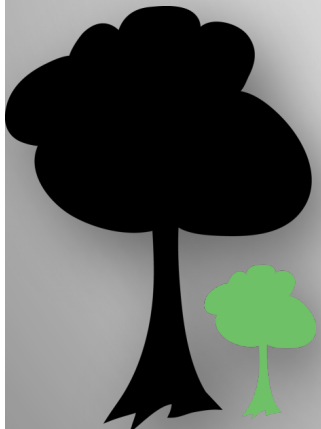
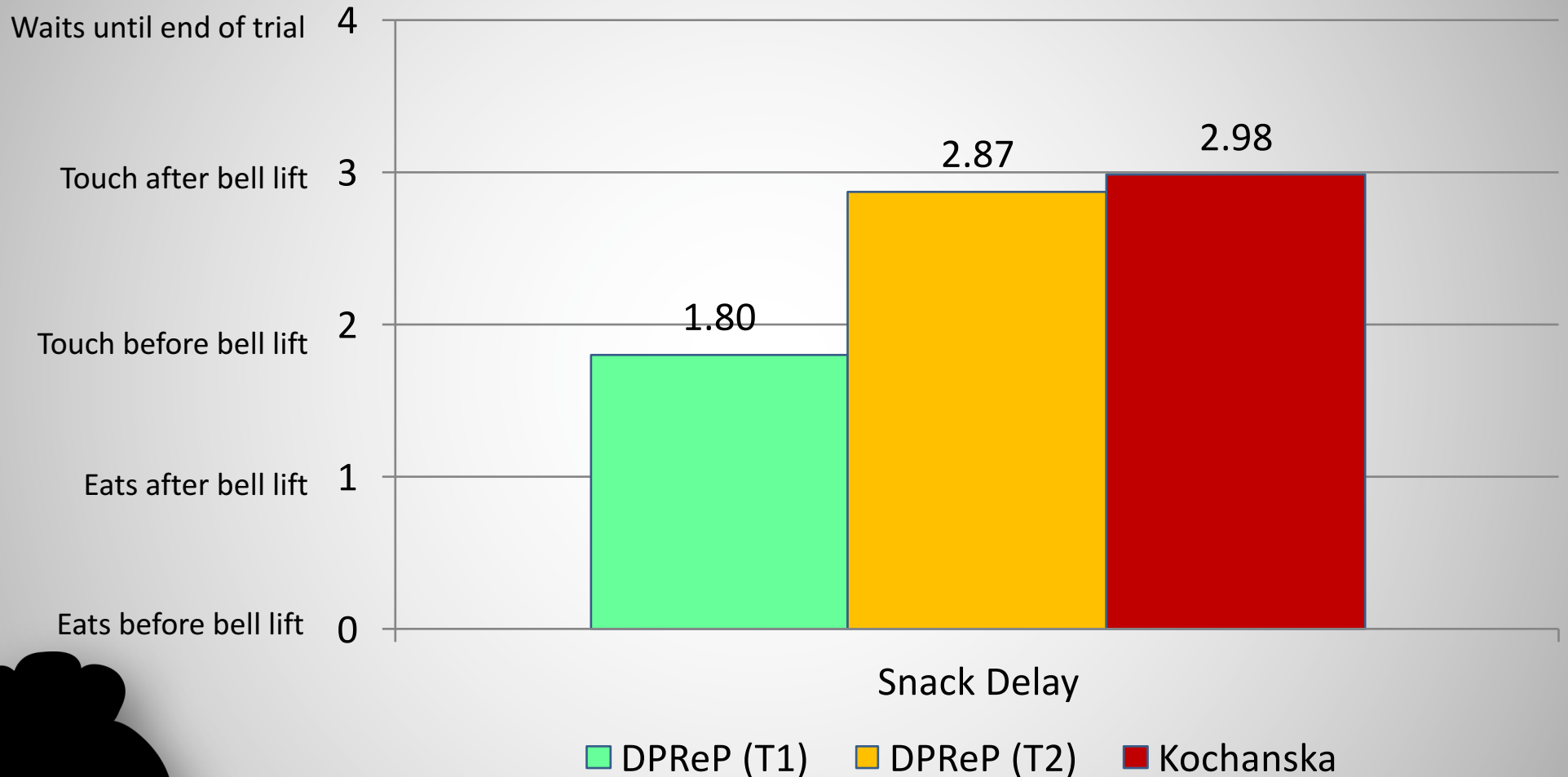
Blair, C.B., & Willoughby, M.T. (2006). Measuring Executive Function in Young Children: Self-Ordered Pointing. Chapel Hill, NC: The Pennsylvania State University and The University of North Carolina at Chapel Hill.

# DPRReP Findings Overview: Patterns of Self Regulation Development



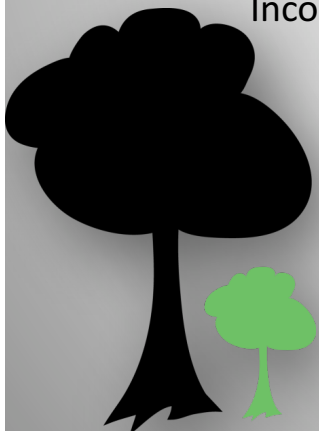
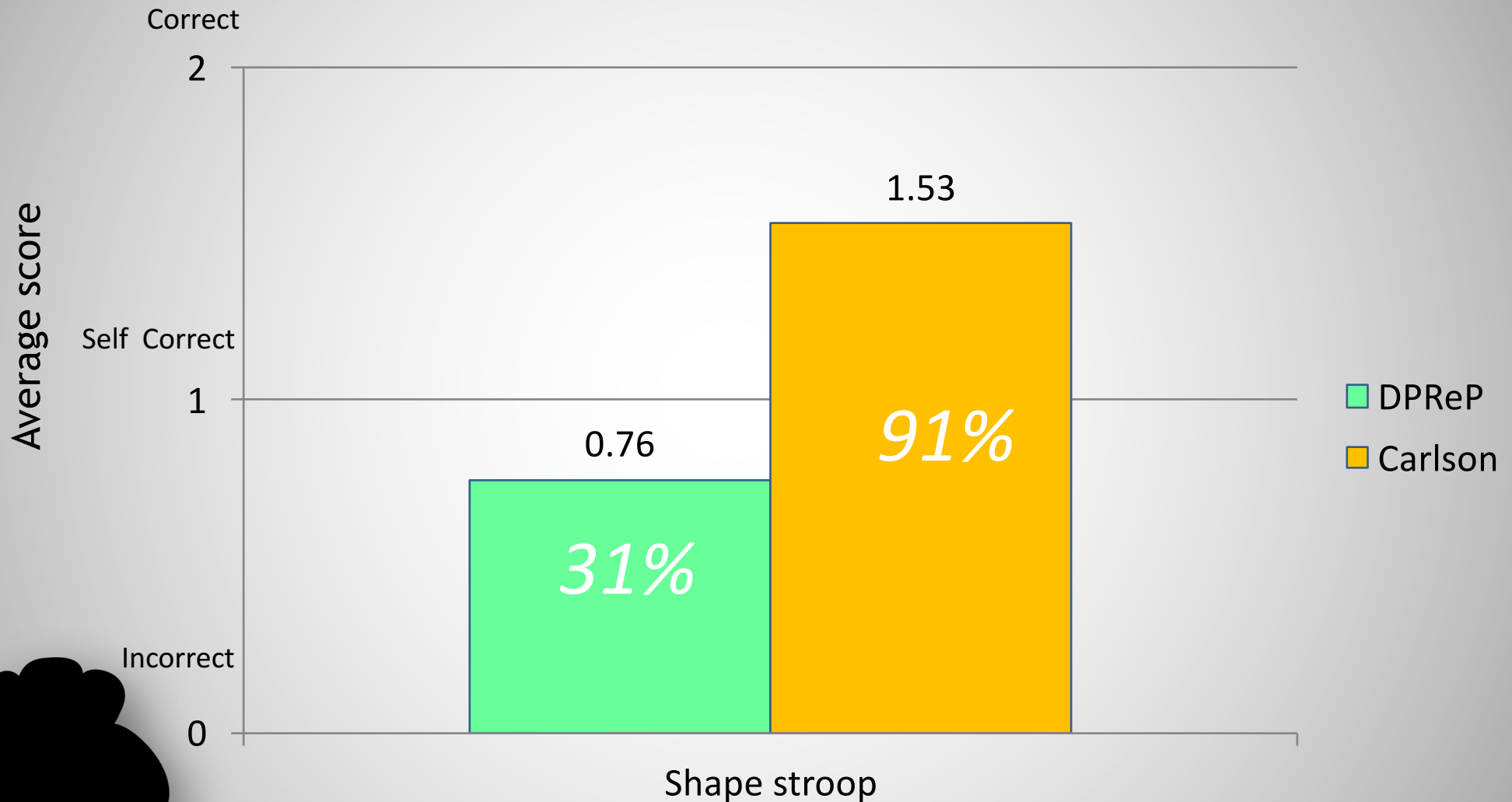
# Cross-sample comparison

## “Touch” score



Kochanska et al., (1996). Age: 26-41m  
(mean 32m)

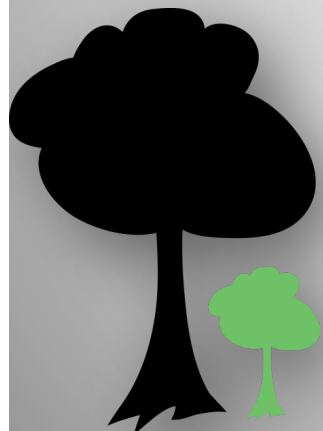
# Cross-sample comparison



Carlson, Mandell, & Williams, 2004  
Age: 24m

# Self Regulation Factor Model

- Inhibitory control (T1 and T2)
  - Snack Delay
  - Wrapped Gift/Wait For Bow
  - Forbidden Toy
- Complex response inhibition (T2 only)
  - Mommy & Me
  - Heads & Toes
- Set Shifting (T2 only)
  - DCCS
- Working Memory (T2 only)
  - Memory Span



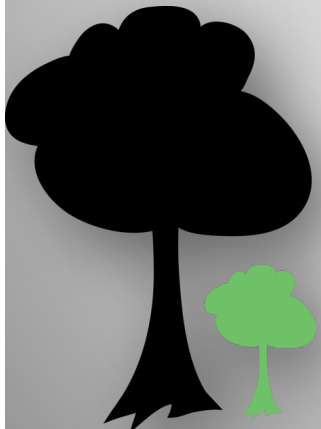
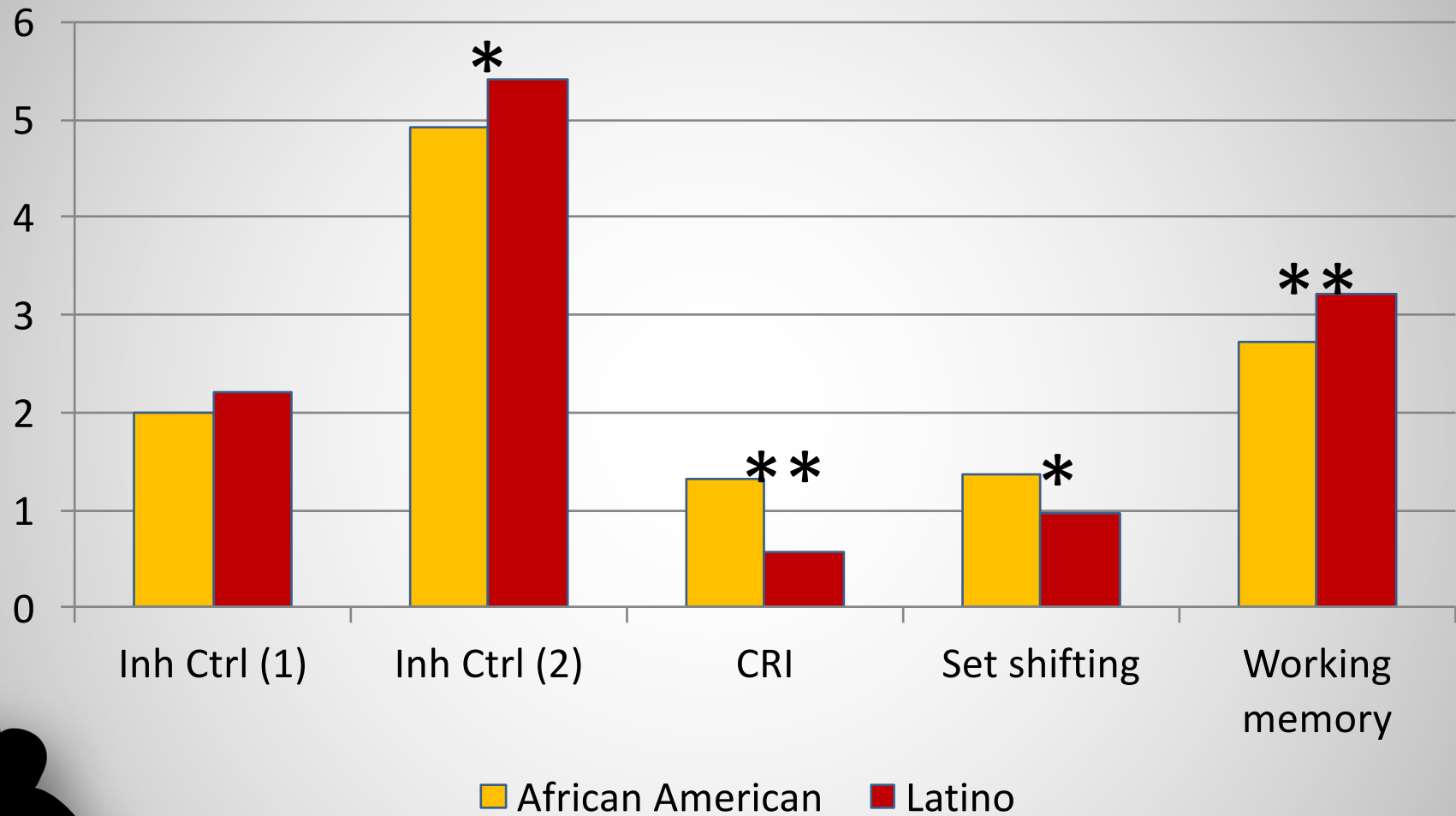
# DPreP Findings Overview: Self Regulation and School Readiness

	IC1	IC2	CRI	SS	WM	BR	PPVT	CBCL
Inhibitory control (T1)	1.00							
Inhibitory control (T2)	<b>.30</b>	1.00						
Complex response inhibition	.08	<b>.11</b>	1.00					
Set shifting	.05	.08	.10	1.00				
Working memory	<b>.11</b>	<b>.18</b>	-.02	.00	1.00			
Bracken	<b>.25</b>	<b>.22</b>	<b>.15</b>	<b>.16</b>	<b>.22</b>	1.00		
PPVT/TVIP	<b>.16</b>	<b>.29</b>	.03	.07	<b>.27</b>	<b>.44</b>	1.00	
CBCL	-.05	<b>-.16</b>	-.01	-.09	<b>-.11</b>	<b>-.16</b>	-.09	1.00



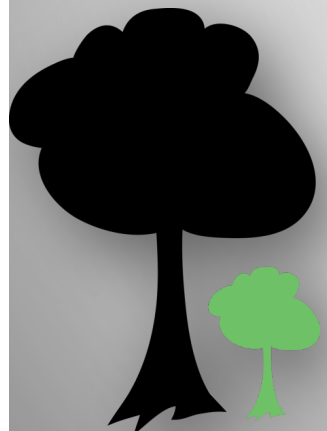
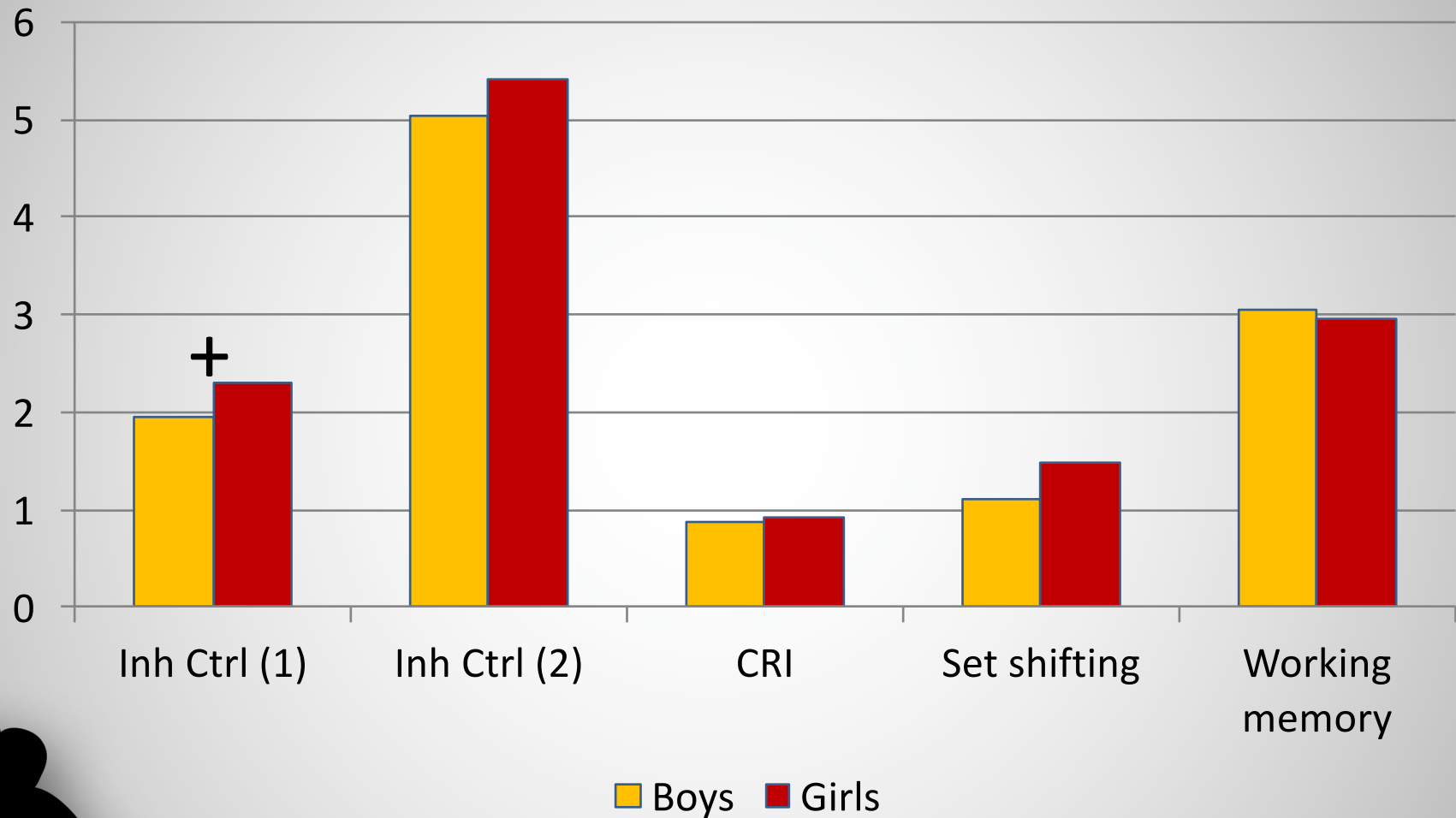
*Bold font indicates  $p < .05$*

# DPRReP Findings Overview: Determinants of Self Regulation



\* $p < .05$ ; \*\* $p < .01$

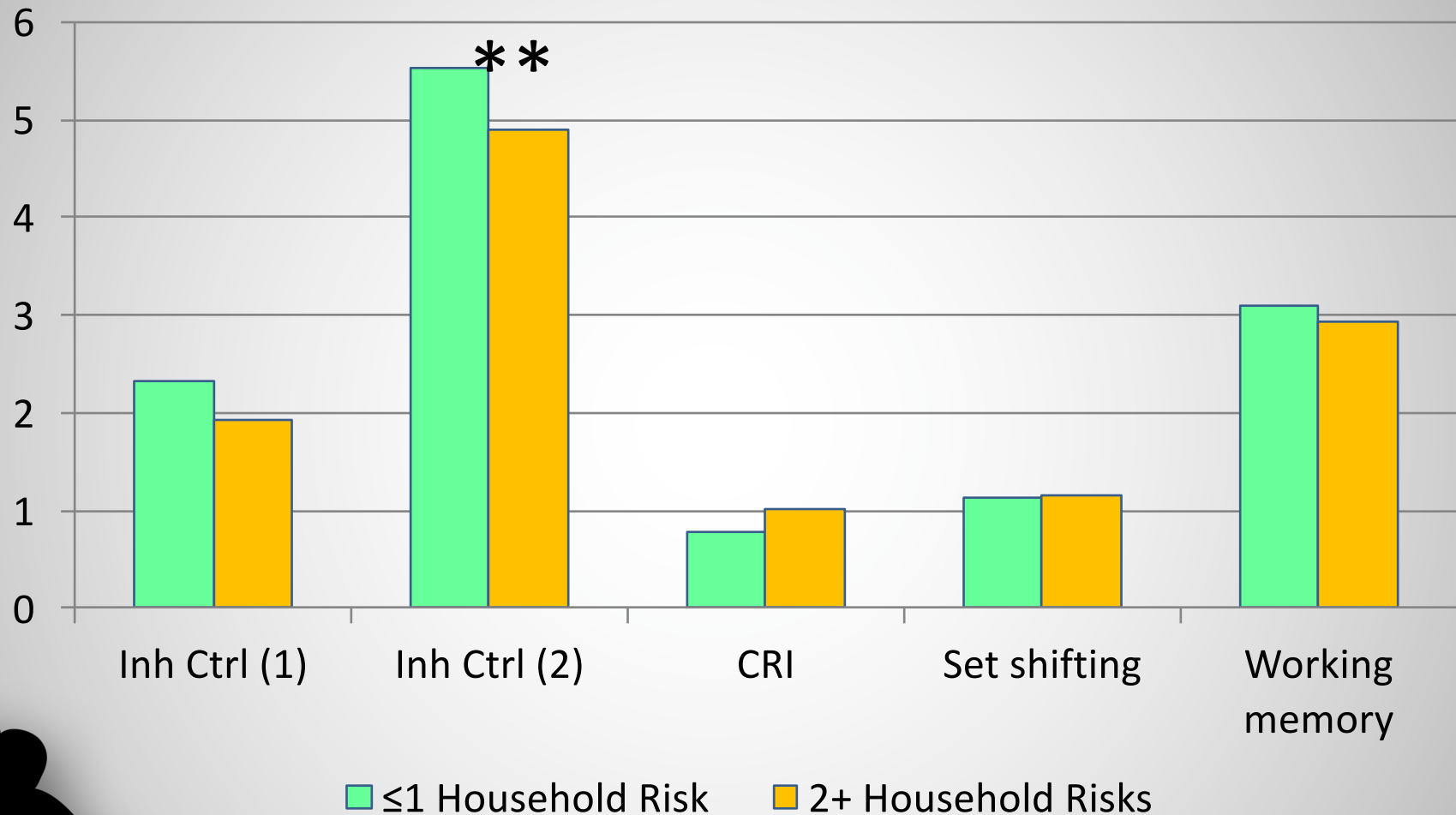
# DPRReP Findings Overview: Determinants of Self Regulation



+ $p < .10$

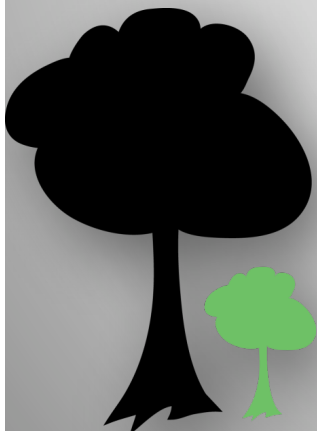


# DPRReP Findings Overview: Determinants of Self Regulation



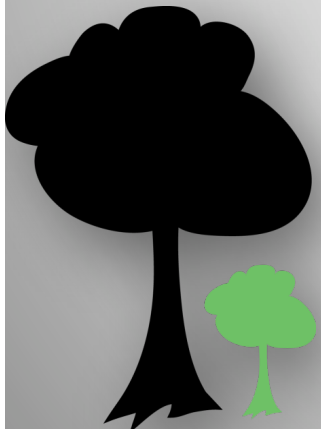
**Household risk factors:** PCG <HS education; below 50% FPL, single parent, child:adult ratio 3+; change in PCG; change in PCG partner; household move; neighborhood/household safety concerns; PCG depression; PCG harsh during interaction

\*\* $p < .01$



# DPRReP Findings Overview: Determinants of Self Regulation

	Parent Sensitive Supportiveness	Parent Harsh Intrusiveness
Inhibitory control (T1)	(+) <sup>***</sup>	(-) <sup>**</sup>
Inhibitory control (T2)	(+) <sup>***</sup>	(-) <sup>*</sup>
Complex response inhibition	n.s.	n.s.
Set shifting	n.s.	(-) <sup>*</sup>
Working memory	(+) <sup>*</sup>	n.s.



\* $p < .05$ ; \*\* $p < .01$ , \*\*\* $p < .001$

# Dallas Preschool Readiness Project

Funded by the *Eunice Kennedy Shriver* National Institute of Child Health and Development

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