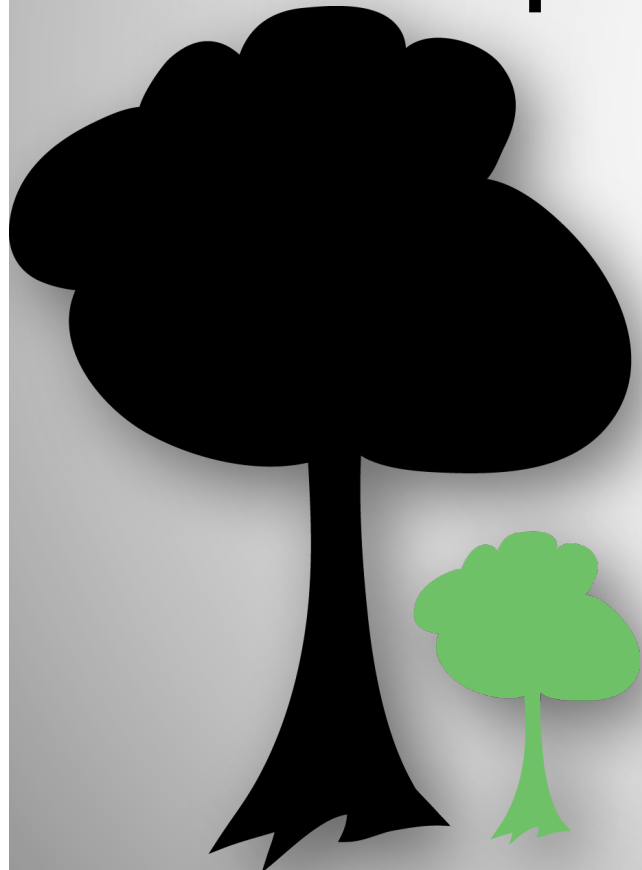


Dallas Preschool Readiness Project

**Self regulation abilities in low income
ethnic minority preschoolers:
Disparities in school readiness**

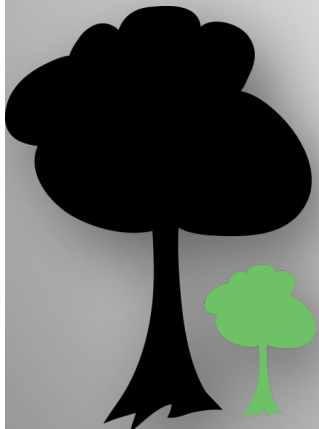
Margaret Tresch Owen, PhD

The University of Texas at Dallas
Center for Children and Families

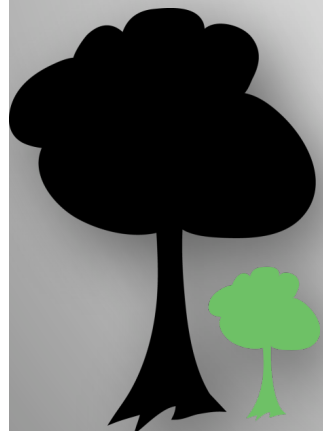


Self-Control

- Self-control is critical to success at home, at school, and with peers
- *Involves the ability to integrate attention, working memory, and inhibitory control*
 - to suppress a dominant behavior and to perform instead a subdominant behavior.
 - Delay of gratification - *don't touch!*
 - Slowing down a gross motor activity
 - Lowering the voice
 - Effortful attention

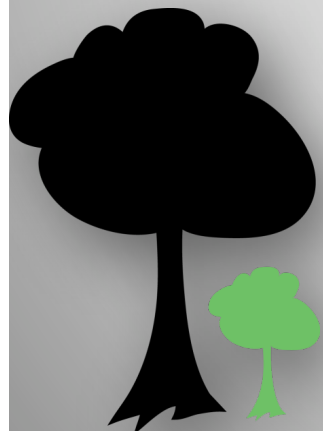


- 10-fold increase in research 2000-2011
- Self regulation is positively associated with better academic performance & behavioral adjustment in kindergarten and early elementary school.
 - a foundation for academic achievement
- Development of interventions targeting self regulation to impact early achievement.



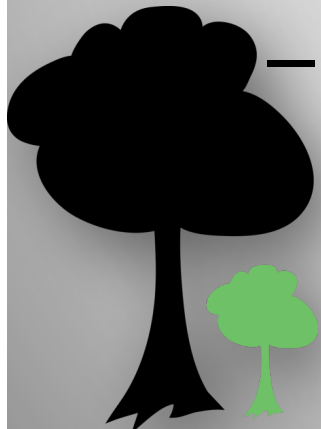
Achievement disparities: Focus on school readiness

- Race/ethnic disparities in school readiness
 - 42% of Hispanic kindergarteners are in the lowest quartile of reading skills.
 - Disparities persist
 - Disparities increase for children from poorest homes
- Self regulation skills may be particularly important for low-income ethnic minority preschoolers' school readiness:
 - Source of risk and of resilience



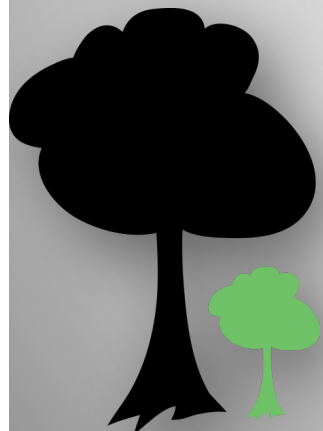
Self control & self reliance set the stage for learning

- listening
- sitting still
- following directions
- paying attention to an authority figure
- repressing impulses
- focusing attention
- asking for help in an appropriate fashion



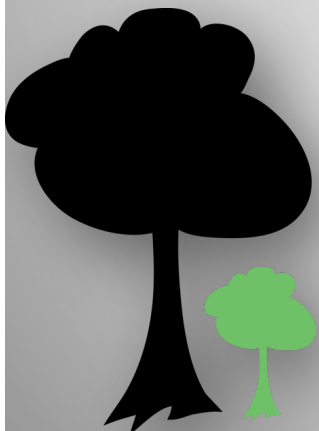
Self Regulation → Better Academic Achievement

- Emotion regulation predicted academic success in kindergarten (Graziano et al., 2000)
 - Even after adjusting for the effects of IQ, behavior problems, and teacher-child relationship quality
- Behavioral regulation predicted literacy and math skills (Blair & Razza, 2007; McClelland et al., 2007)
 - After controlling for effects of cognitive ability



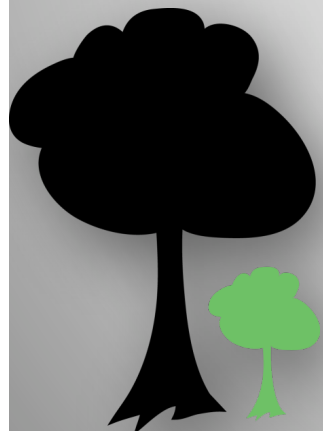
What do we know about the development of self regulation skills?

- Essentially no longitudinal data on self regulation development in low-income ethnic-minority children
- 3 questions addressed:
 1. What levels of self regulation are observed across two ages in early preschool?
 2. Do the observed measures of self regulation represent a single or multidimensional construct in this population?, and
 3. Do measurement properties differ by child ethnicity or gender?

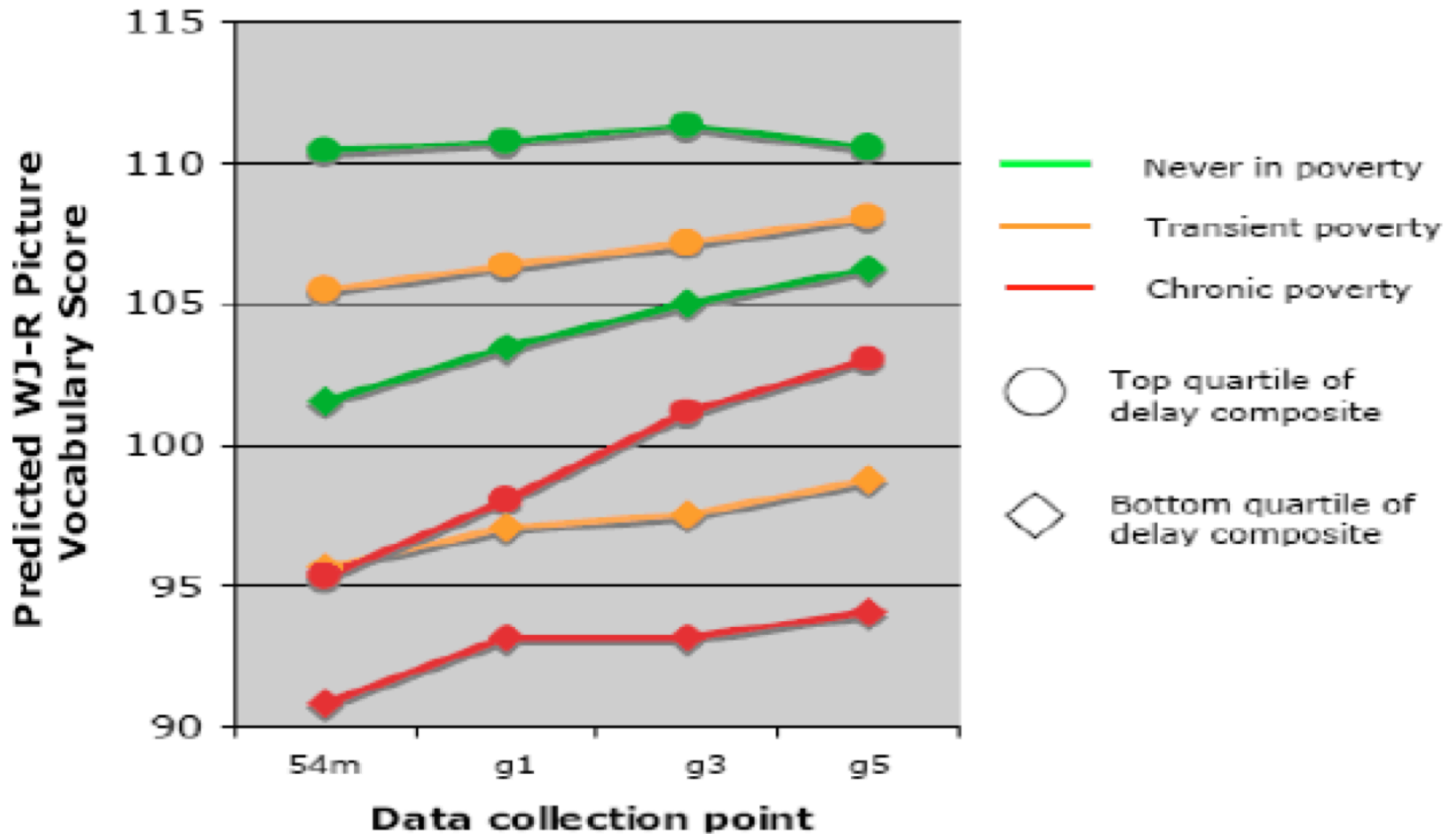


Can good self regulation skills help close the achievement gap for poor children?

- Data from NICHD Study of Early Child Care and Youth Development
- Academic achievement measured from 54m through Grade 5 for 3 groups
 - Chronic poverty in early childhood
 - Transient poverty
 - Never poor
- Child self regulation abilities measured at 36m & 54m



Self-control modified achievement trajectories for poor children



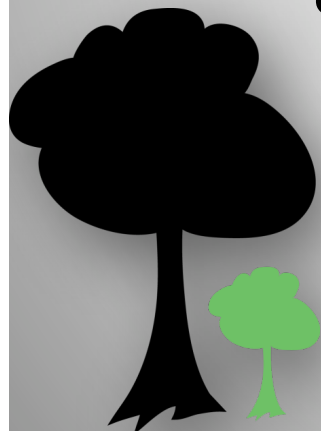
Self-control predicted higher achievement for all groups, but greatest growth in achievement seen for chronically poor children with good self-control.

---closing the gap with good self regulation skills

Dallas Preschool Readiness Project

DPreP

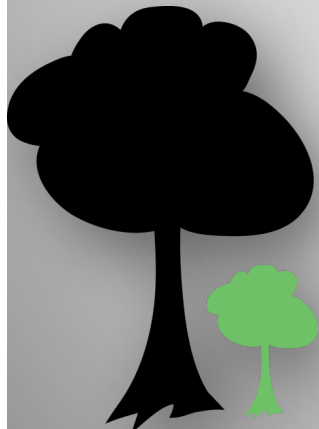
- To study development of self regulation and school readiness among low-income ethnic minority children
- To identify how self regulation abilities are shaped by family context & culture
 - Parenting qualities
 - Family cultural context



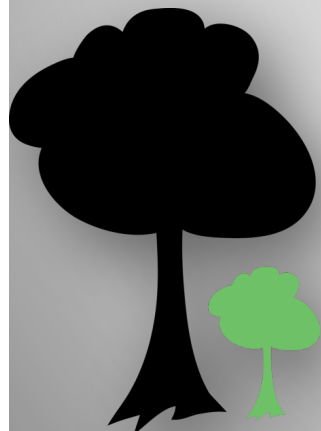
Dallas Preschool Readiness Project

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

- 407 children recruited at age 2½ years
 - 208 Latino, 190 African American
- Multiple measures of self regulation
 - Ages 2 ½ and 3 ½
- Other measures
 - Mother-child and Father-child interactions
 - Racial socialization practices
 - Standardized School Readiness



Sample characteristics



*** $p < .001$

	Hispanic (N = 224)	African American (N = 183)
Father in home ***	90%	60%
Family income ***		
Less than 50% poverty	19%	61%
50-99% poverty	41%	17%
100-149% poverty	27%	14%
149+% poverty	12%	8%
Maternal education ***		
Less than high school	43%	15%
High school	35%	45%
More than high school	22%	40%
Maternal race/ethnicity		
White, non-Latina	0%	4%
Latina	92%	0%
African American	0%	93%
Multiracial	8%	3%
Child gender = Boy	52%	55%
Foreign born (Mexico)	73%	---
Spanish preferred language-child	79%	---
Spanish preferred language-parent	75%	---

Self Regulation & Executive Function Tasks at 2 Ages

Time 1 – 30 months	Time 2 – 42 months
Snack Delay	Snack Delay
Wrapped Gift	Wrapped Gift
Forbidden Toy	Mommy & Me
Mommy & Me	Heads & Toes
Shape Stroop	Dimensional Change Card Sort
Walk-a-line Slowly	Memory Task



HOT EXECUTIVE CONTROL TASKS:

INHIBITORY CONTROL TASKS

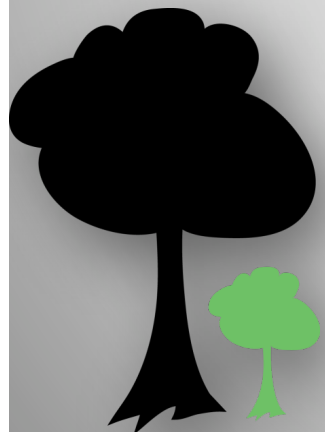
Snack Delay (30m & 42m)

Wrapped Gift (30m & 42m)

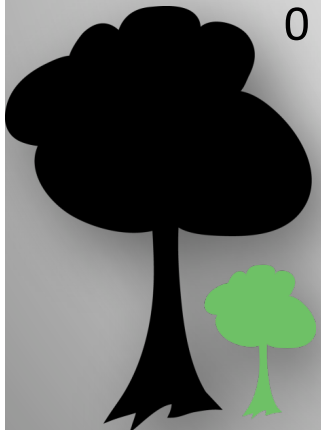
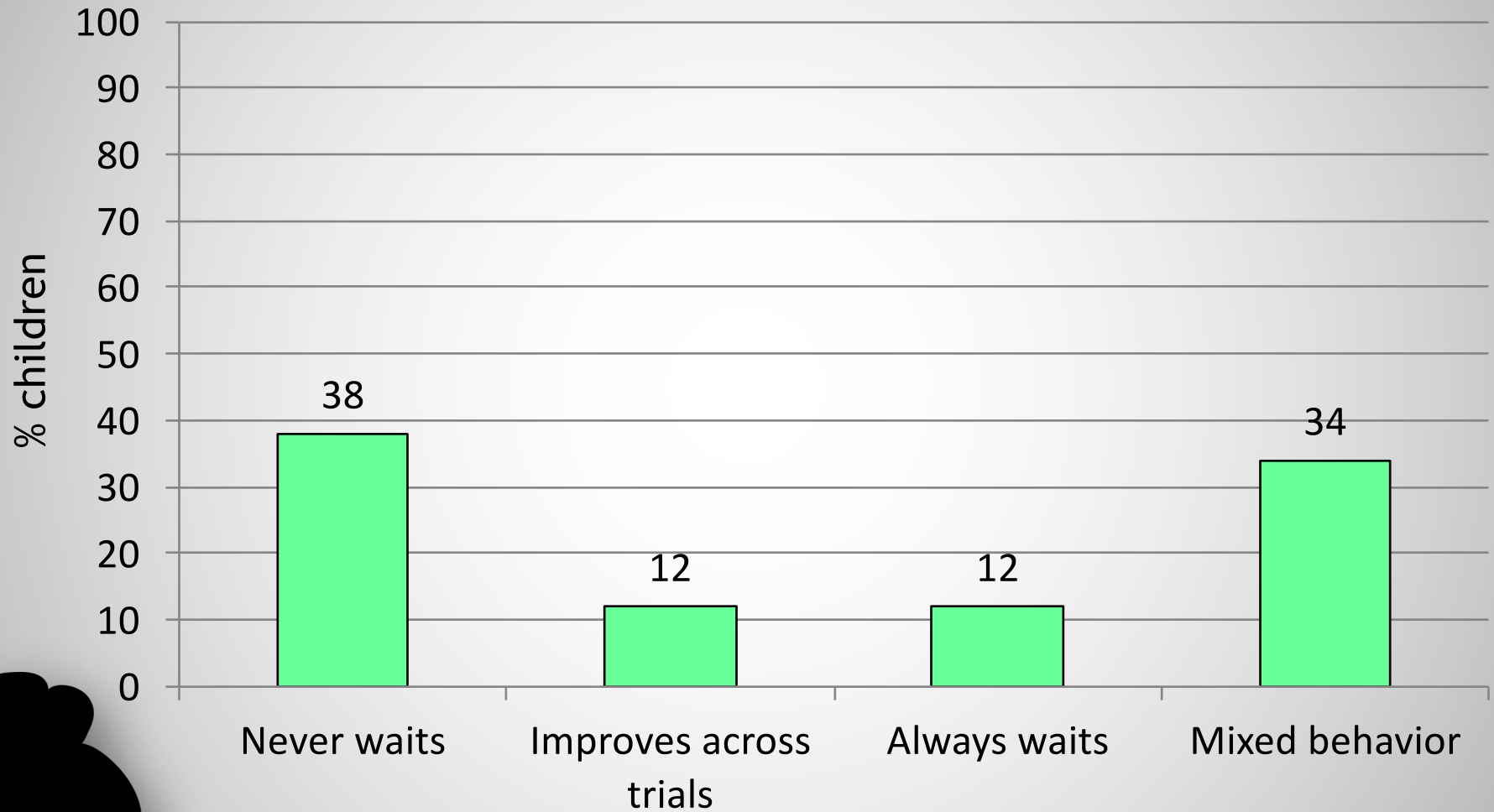
Forbidden Toy (30m)



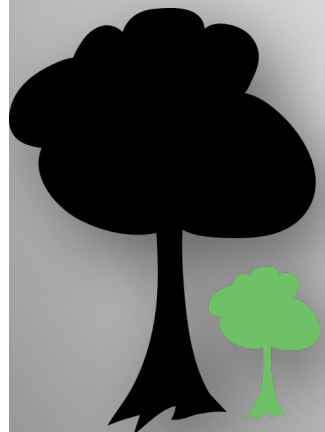
Snack Delay



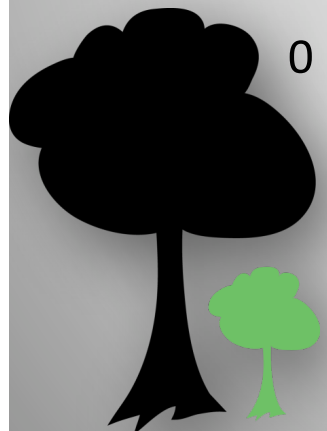
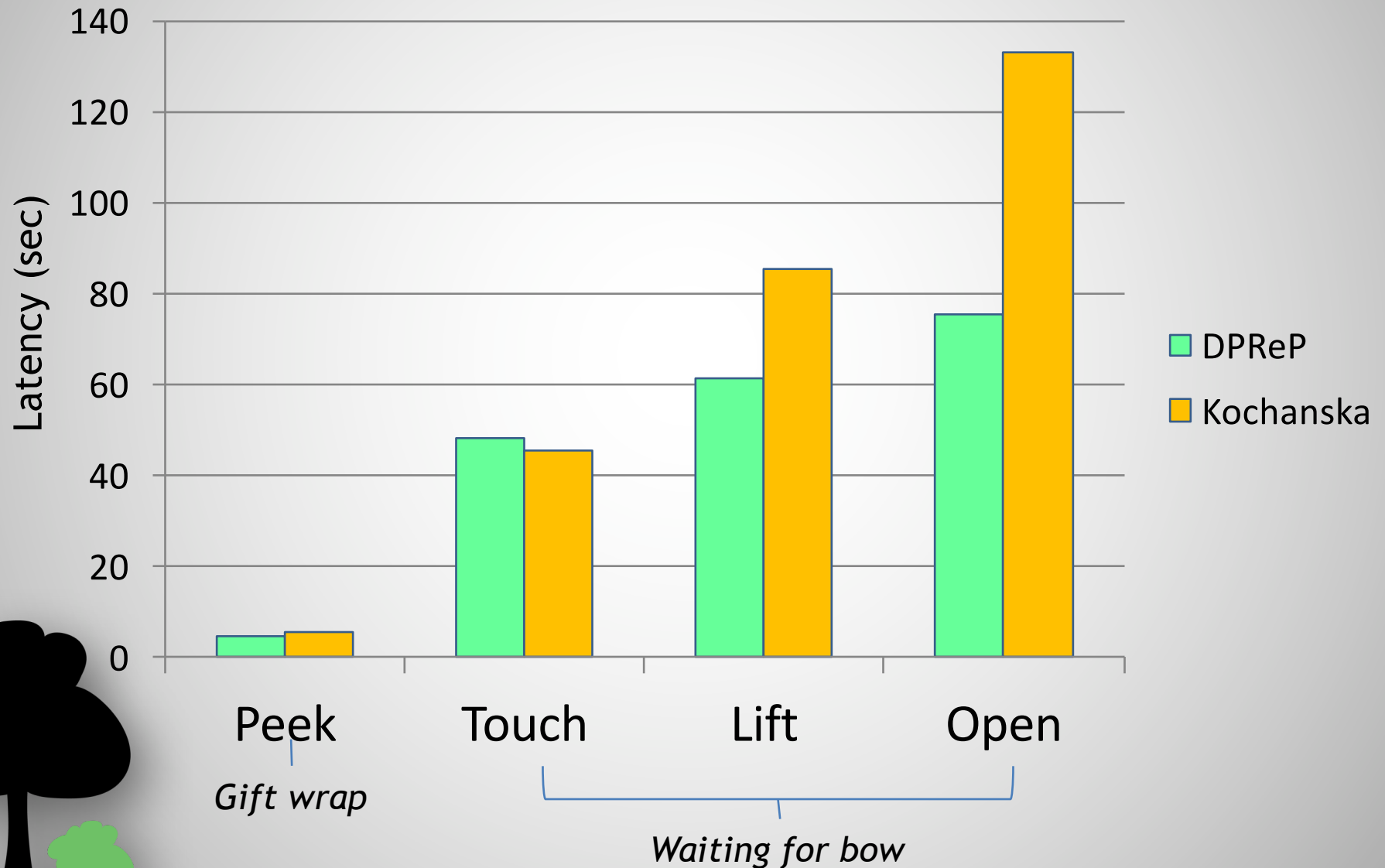
Snack Delay: across trials, 30 months



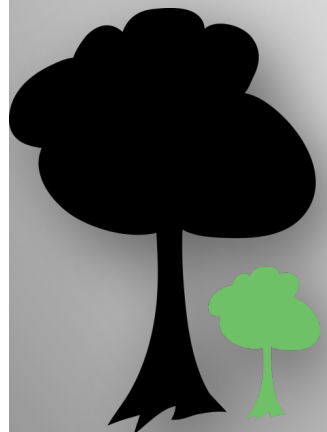
Wrapped Gift



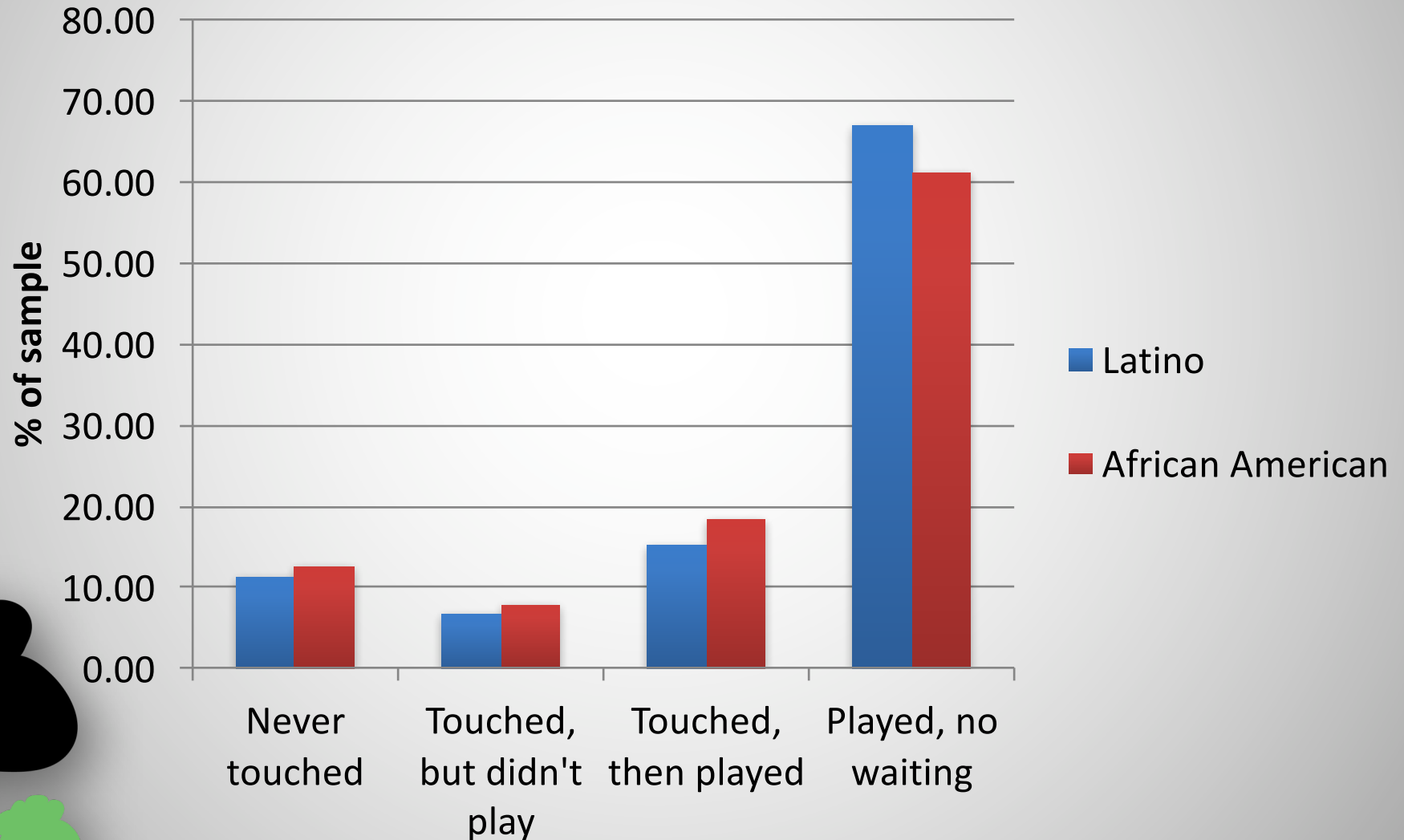
Gift Wrap Task at 30 months



Forbidden Toy



Forbidden Toy: only 12% waited at 30m



Cognitive Flexibility Tasks/Complex response inhibition

Ability to suppress a prepotent
response

Shape stroop (30m), Heads & Toes
(42m),

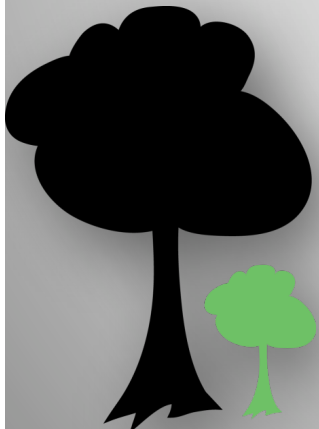


Effortful attention tasks: Mommy & Me (30m & 42m)

Mommy & Me

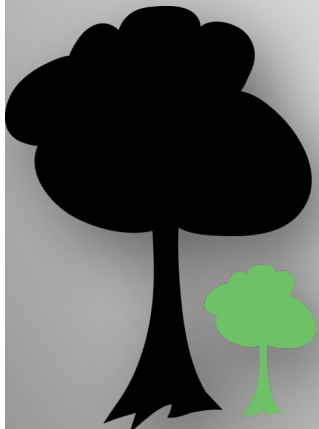
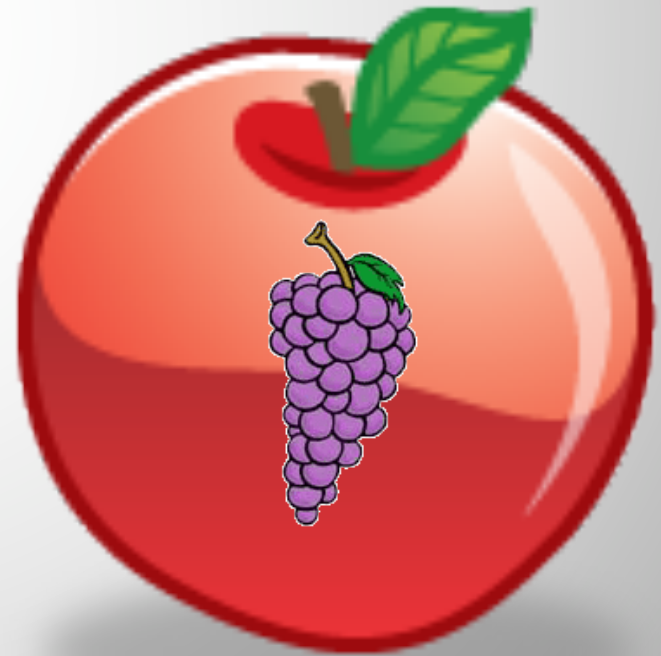
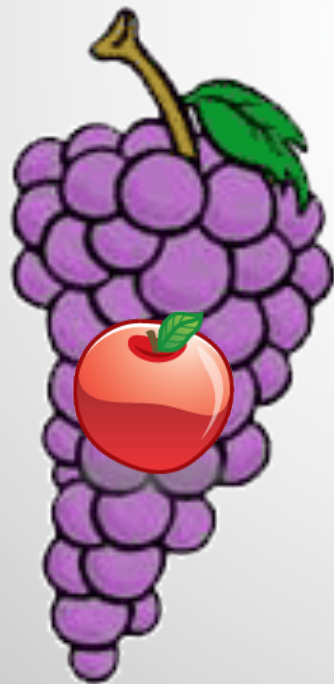


**Dallas Preschool
Readiness Project**



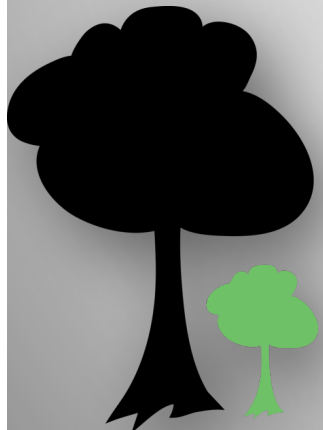
Effortful attention tasks: Fruit Stroop

"Show me the baby grapes"



Effortful attention tasks: Heads & Toes, 42 mos.

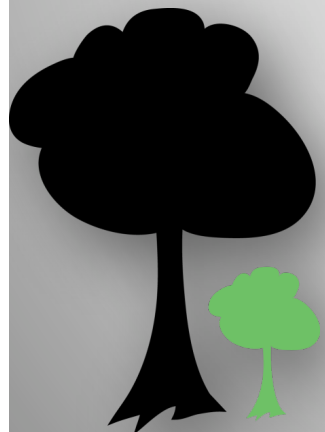
- A “silly game”
- When I say touch your head, I want you to touch your toes.
- When I say touch your toes, I want you to touch your head.



Heads & Toes

- www.dropbox.com

1086_42_HT.mpg



Comparisons between low-income DPReP at 30 mos. and middle-income samples

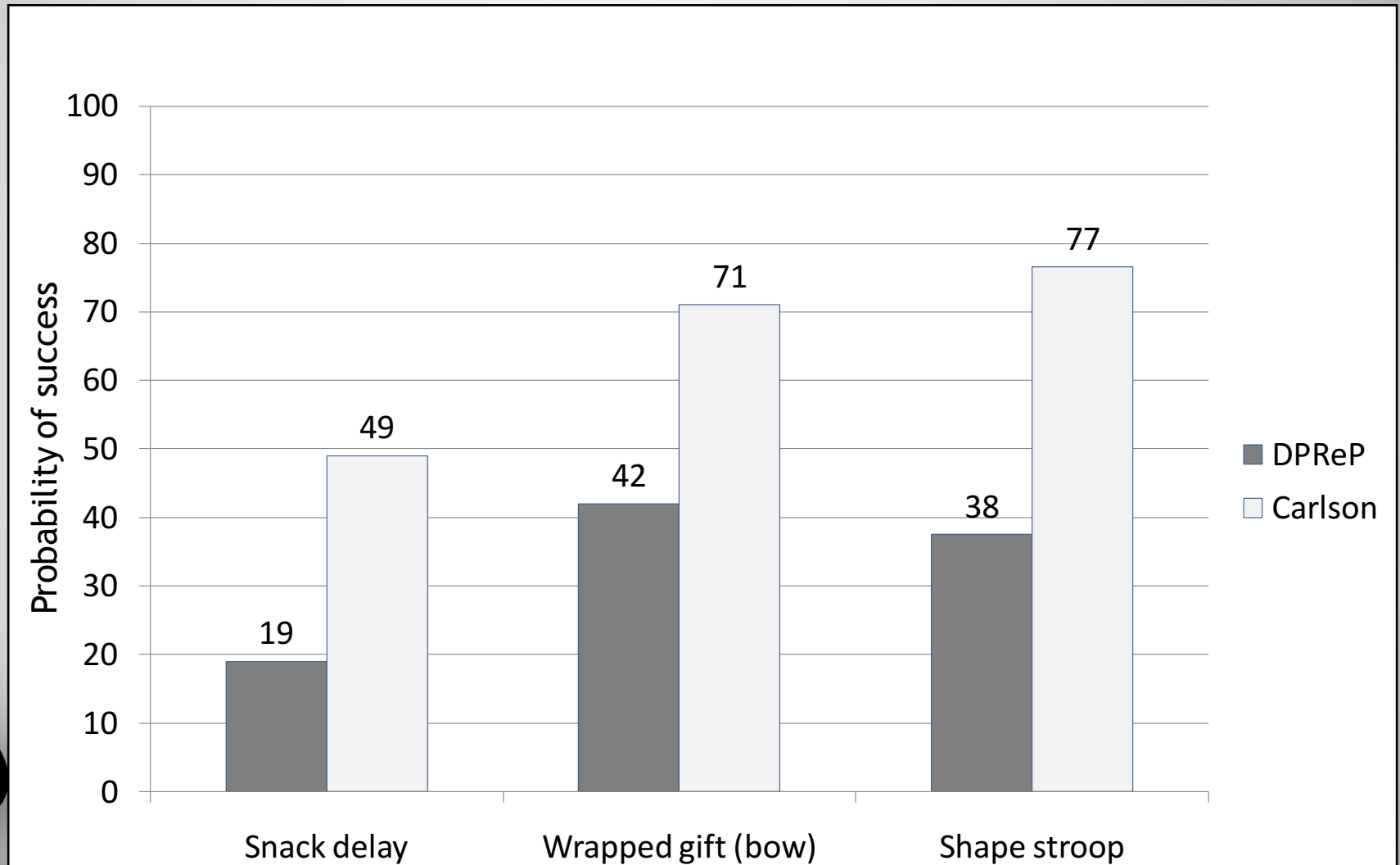
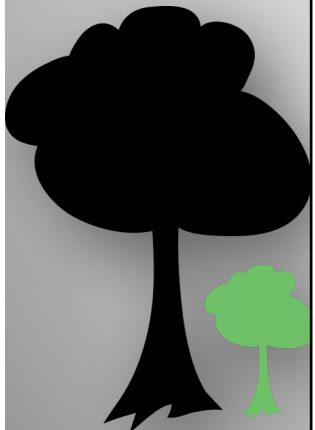
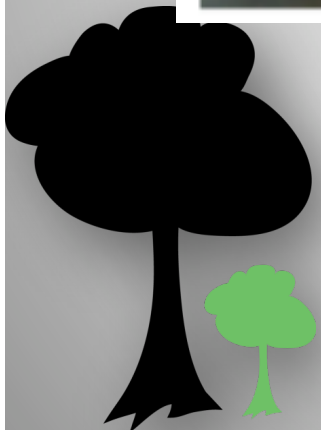


Figure 2. Probability of success on three self-regulation tasks in two samples



Memory Chocolates (working memory)



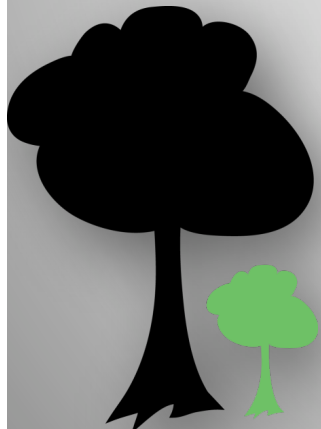
Memory Chocolates

TESTING 1

Remove all the lids and tell the child: **“THIS TIME I WANT YOU TO FIND 2 ANIMALS.”**

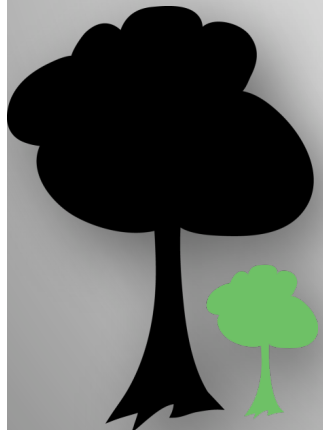
Cover the chocolates and say: **“FOR EXAMPLE IF I SAY FIND CAT AND ZEBRA, YOU FIND THEM LIKE THIS.”** Demonstrate Cat and Horse.

Read prompt slowly: Find the...	Response						Score (1 point for each correct word)
Rabbit and Lion	Cat	Elephant	Fish	Lion	Rabbit	Horse	
Elephant and Fish	Cat	Elephant	Fish	Lion	Rabbit	Horse	
Horse and Rabbit	Cat	Elephant	Fish	Lion	Rabbit	Horse	
Stop if total < 4 TOTAL:							



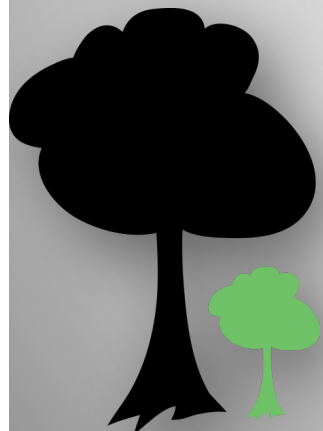
A Component of School Achievement Disparities

- Self regulation skills lag in these poor ethnic-minority children.
- An additional source of school readiness achievement disparities



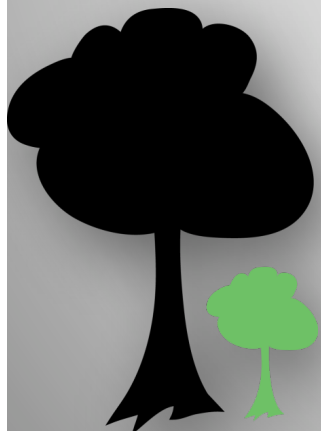
Risk Factors for Self-Regulation Problems

- Environmental risks
 - Poverty
 - Sleep disruption
 - Self control often impaired the next day
 - Exposure to alcohol or drugs prenatally
 - Maltreatment and neglect



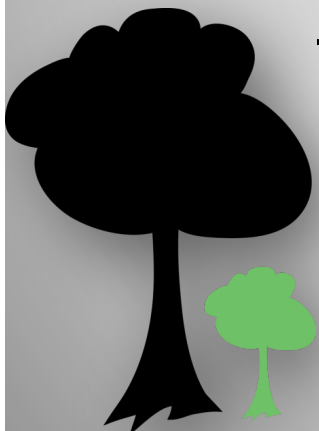
Domains of Emerging Self Regulation in DPReP

- 4 factor model across ages 2 ½ and 3 ½ years
 - “Hot” executive (or inhibitory) control
 - Complex response inhibition (only at age 3 ½)
 - Working memory
 - Set shifting



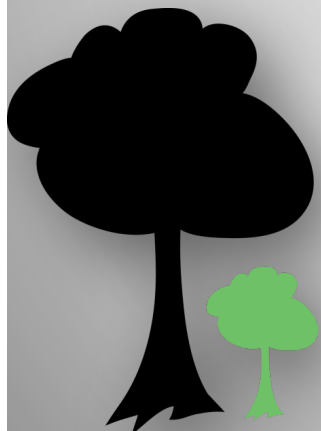
Differences by child demographic characteristics

- Girls > Boys
 - Snack delay (inhibitory control)
- African American > Latino
 - Cognitive flexibility skills
- Latino > African American
 - Inhibitory control
 - Working memory

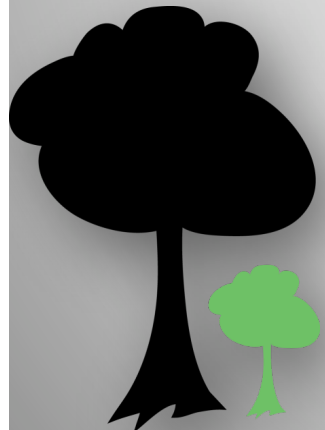


Individual Differences in Self-Regulation

- Environment, temperament, & genes influence development of self regulation
 - Home environment and caregiver relationships
 - Positive guidance from mothers
 - Positive guidance from fathers
 - Important for greater effortful-attention abilities
 - Associations found with African American, but not Latino fathering qualities

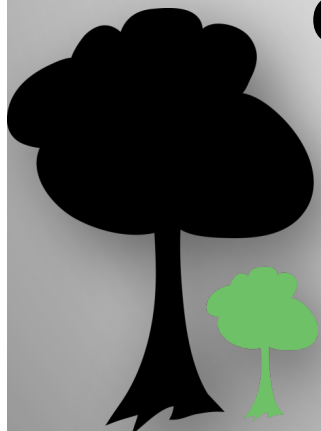


Mother-child interaction



Helping Children Develop Self-Control

- Self-control is an important ingredient for success of at-risk children
 - Associated with fewer behavior problems, better school achievement
- Interventions can provide experiences needed for developing better self-control



Tools of the Mind curriculum

- 40 activities
 - Concrete, external aids to stay on task
 - Child holds drawing of an ear to remind to listen
 - Clean up song
 - Encourage “private speech” to remember
 - Dramatic play
 - Planning skills
 - Impulse control to remain in character
- Improvements in attention-control tasks
(Diamond, Barnett, Thomas, & Munro, 2007. *Science*)
 - The more complicated the task, the better the advantage



Juega Conmigo!



Play With Me!

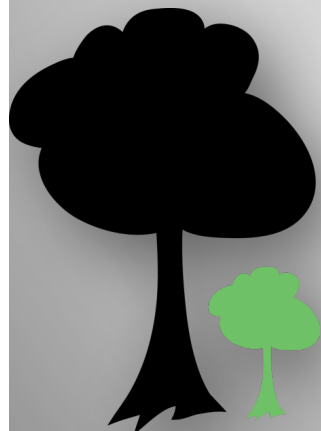
Bring your children (ages 0-3 years) and have a good time playing with educational toys, listening to music and dancing. Bilingual specialists will offer ideas on how to have fun while promoting your child's development.

Thursdays at 10:00 to 11:30 a.m. at the
Bachman Lake Library:
9480 Webb Chapel Road

With support from:
The Mike & Mary Terry
Family Foundation

Center for Children and Families
The University of Texas at Dallas • School of Behavioral and Brain Sciences

For more information, call **214-502-6457**



Dallas Preschool Readiness Project

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



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