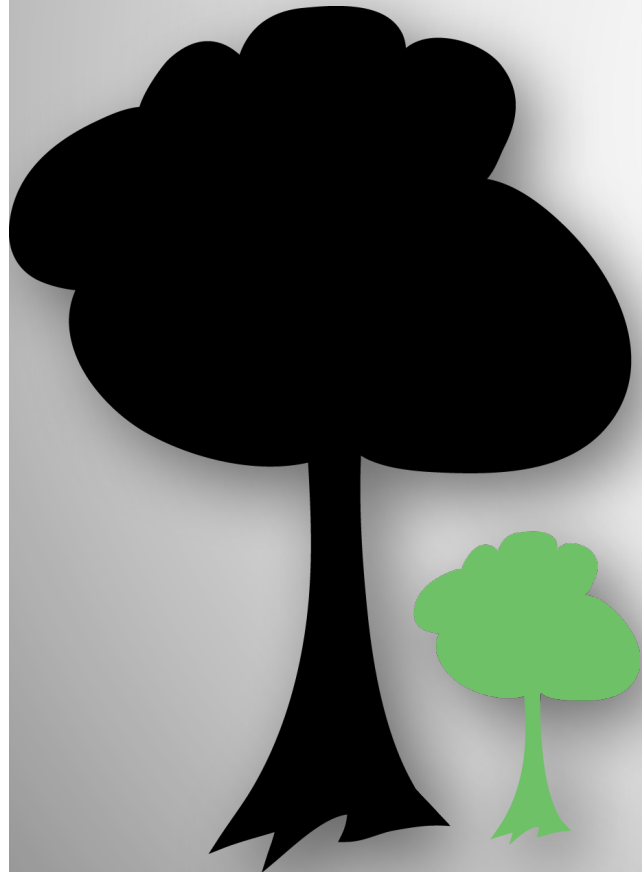


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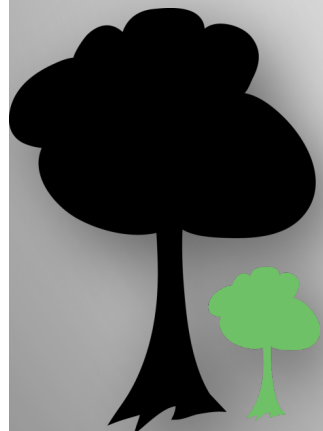
What is “Self Regulation”?

- Convergence of distinct domains of developmental research
 - emotion regulation in socioemotional development
 - executive function in cognitive development
- A range of terms: behavioral regulation, emotion regulation, effortful control, self-control, behavioral inhibition, and executive function
- Behavioral self regulation: “the ability to integrate attention, working memory, and inhibitory control”



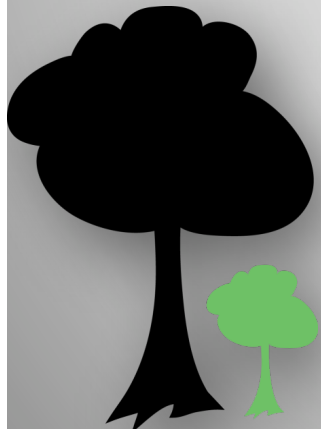
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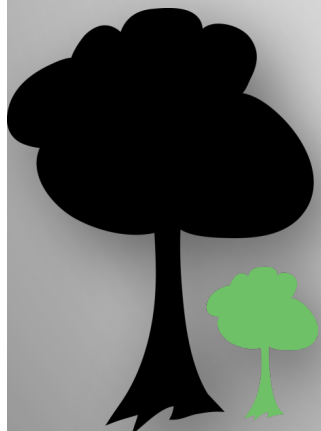
Why is it important?

- Race/ethnic disparities
 - 34% of African American and 42% of Hispanic kindergarteners are in the lowest quartile of reading skills
- Self regulation skills are emerging as an important foundation of school readiness



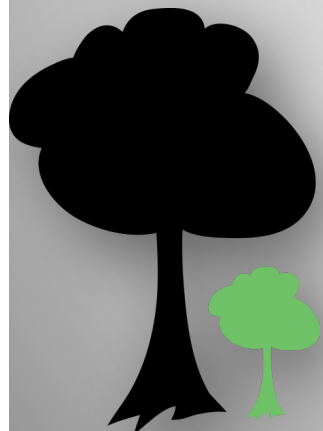
Self Regulation → Better Academic Achievement

- Emotion regulation ability predicted academic success in kindergarten even after adjusting for the effects of IQ, behavior problems, and relationship quality with teacher (Graziano et al. (2000))
- Behavioral regulation predicted literacy and math skills (McClelland et al., 2007)
 - “Head-and-Toes” task: taps inhibitory control, attention, and working memory



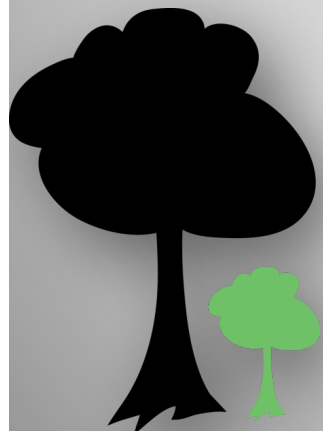
Behavioral Self Regulation → Better Academic Achievement

- Regardless of socio-economic status
- Given the achievement gap, self-regulatory skills may be particularly important to success of poor ethnic-minority children
- But, there are nearly no data on the emergence of these skills in low-income ethnic-minority children.

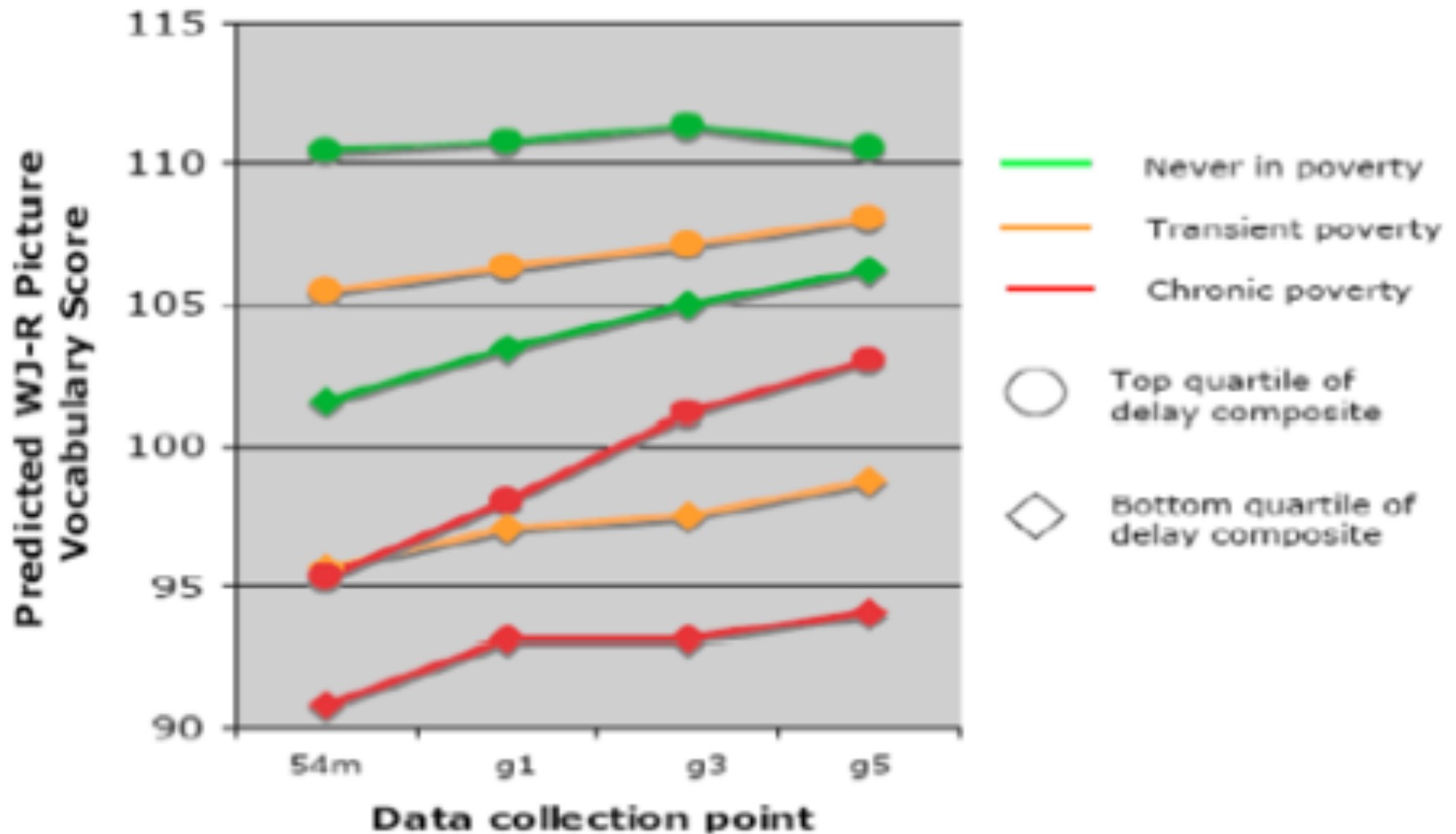


Modifying Role of Self Regulation in Growth in Academic Achievement for Children in Poverty

- Data from NICHD Study of Early Child Care and Youth Development
- Trajectories of academic achievement (Woodcock-Johnson) examined for 3 groups
 - Chronic poverty in early childhood (< 200% poverty)
 - Transient poverty
 - Never poor
- Self regulation: delay gratification & effortful attention, measured 36 & 54 m



Closing the poverty achievement gap with self regulation skills

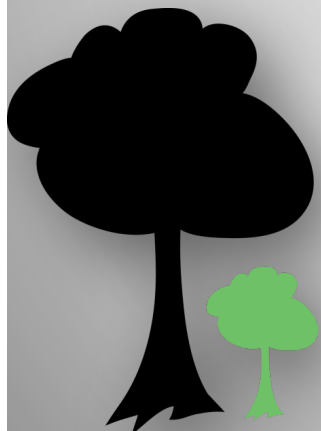


DG predicted higher achievement, regardless of early poverty, but greatest growth in achievement for children in chronic poverty with good delay skills.

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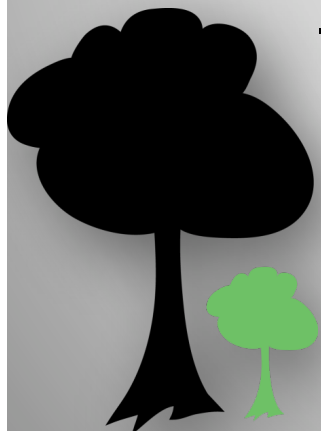
DPreP

- Primary Aims
 - To examine development of self regulation skills and school readiness in children at risk for poor school achievement
 - To identify parenting values and practices of mothers and fathers associated with the development of self regulation



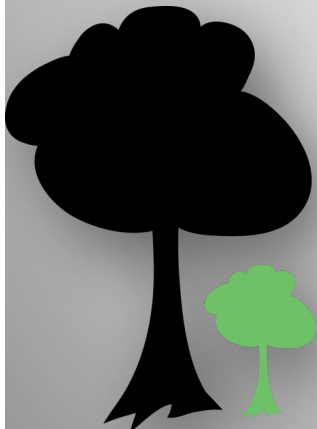
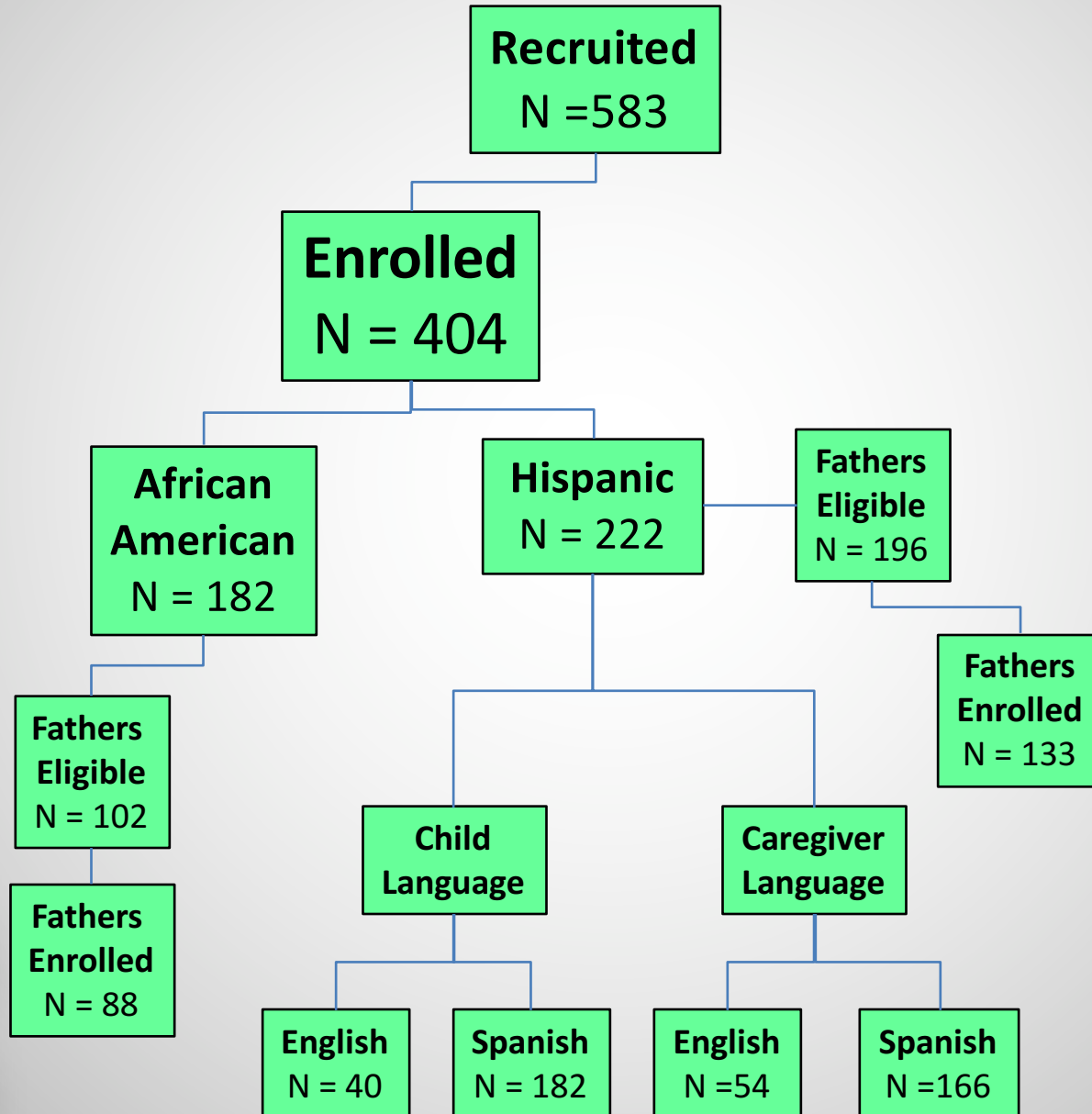
The Development of Self Regulation

- What component skills develop at what ages?
- Few longitudinal studies
- Of the longitudinal studies, most have studied middle-income, White children
 - Are “norms” correct for all children?
 - Is intervention focused on improving children’s self regulation needed?



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The Families

		African American	Latino
Family Income	< 50% FPL	97 (62%)	40 (19%)
	50-99% FPL	26 (17 %)	87 (42%)
	100-149% FPL	22 (14%)	56 (27%)
	150-199% FPL	7 (4%)	21 (10%)
	200-299% FPL	5 (3%)	3 (1%)
Fathers employed		44%	88%
Fathers education	< 7 years	1 (1%)	45 (24%)
	7-12 years	15 (20%)	84 (45%)
	HS degree/GED	49 (65%)	43 (23%)
	> High school	10 (13%)	14 (8%)

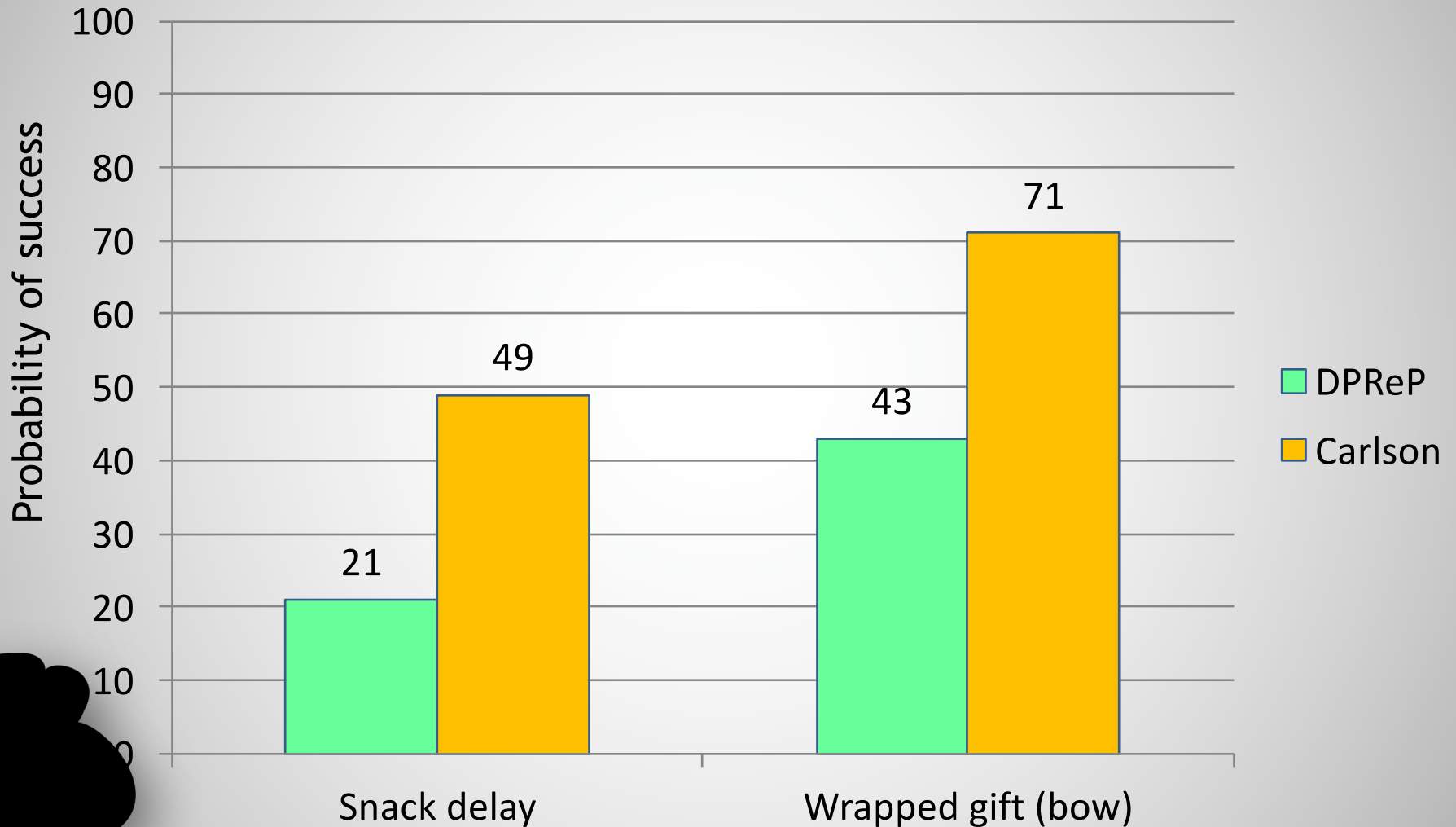


Measures of Self Regulation at 30 mos.

- Simple Response Inhibition
 - Snack Delay
 - Wrapped Gift
 - Forbidden Toy
- } Delay of Gratification
- Complex Response Inhibition
 - Effortful control tasks:
 - Shape Stroop
 - Mommy & Me



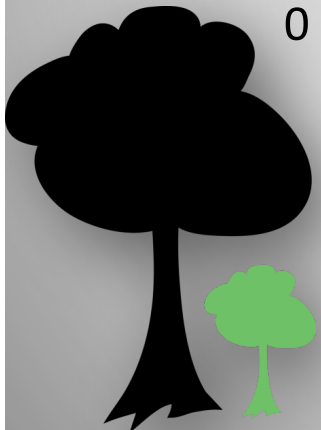
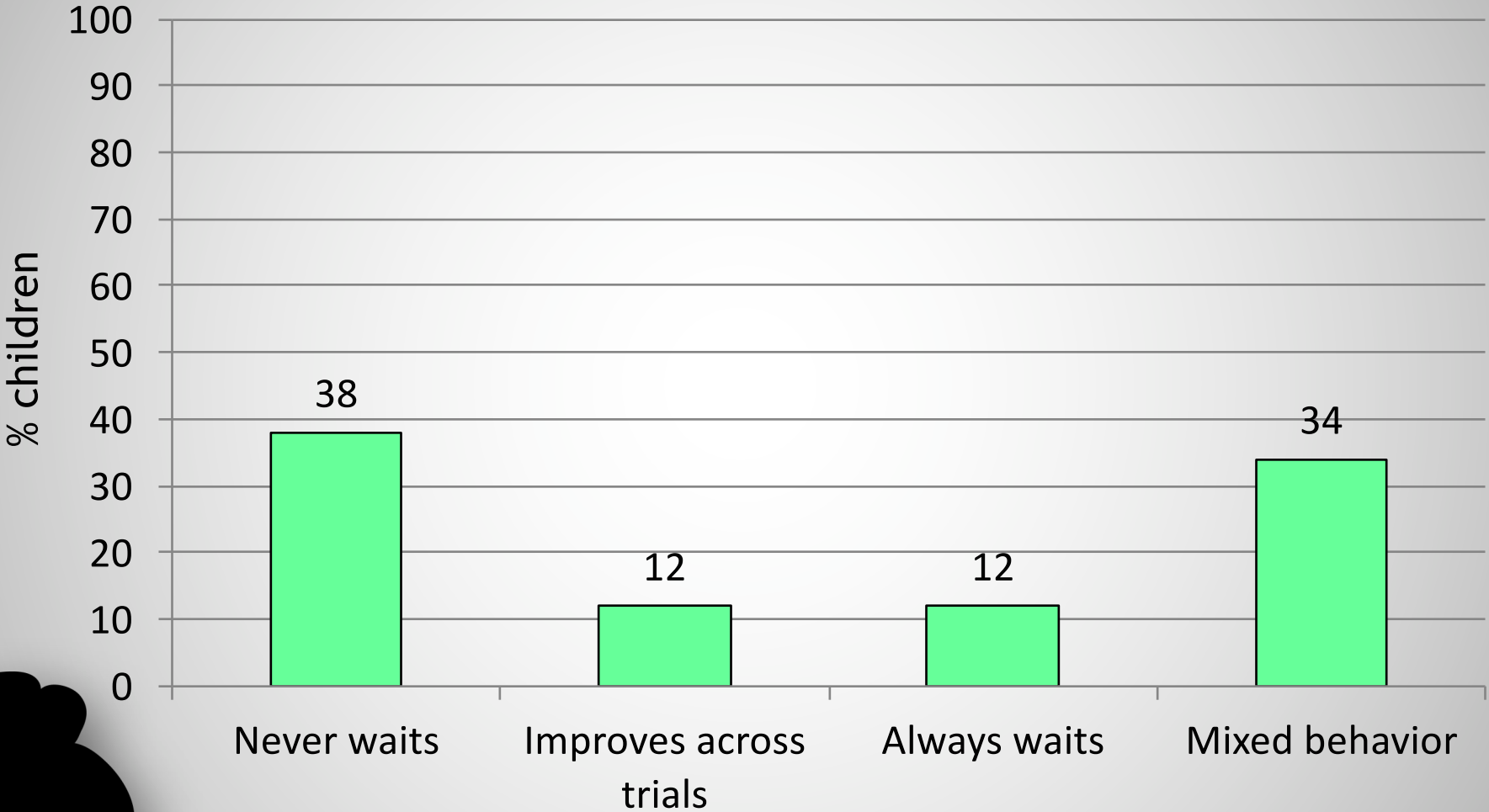
Cross-sample comparison: Delay of gratification tasks



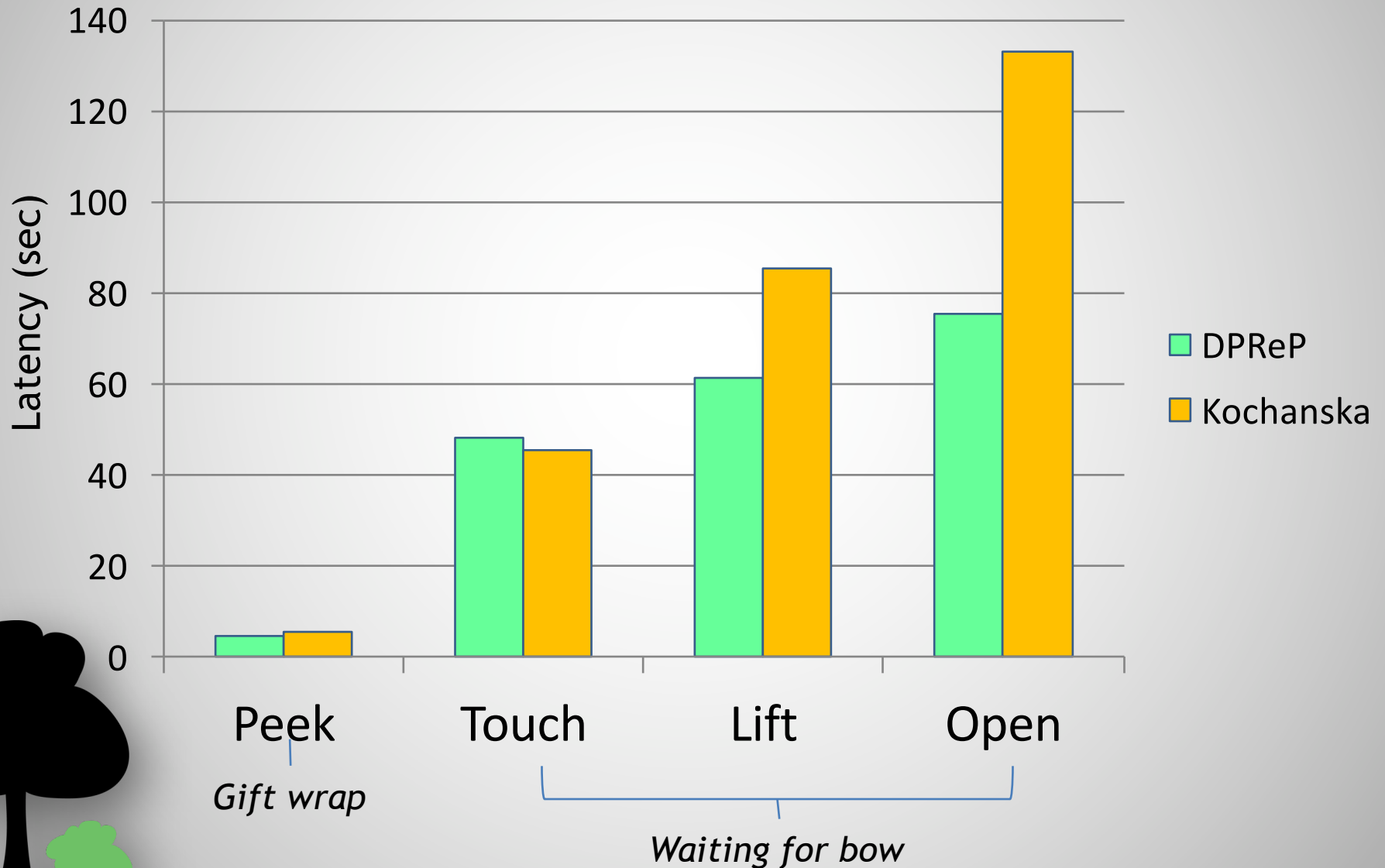
Note: 2 year olds (Carlson sample) vs. 2 ½ year olds (DPReP)



Snack delay: Behavior across trials

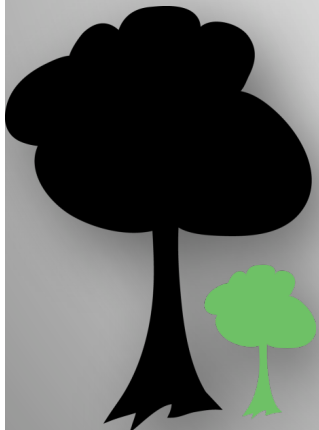
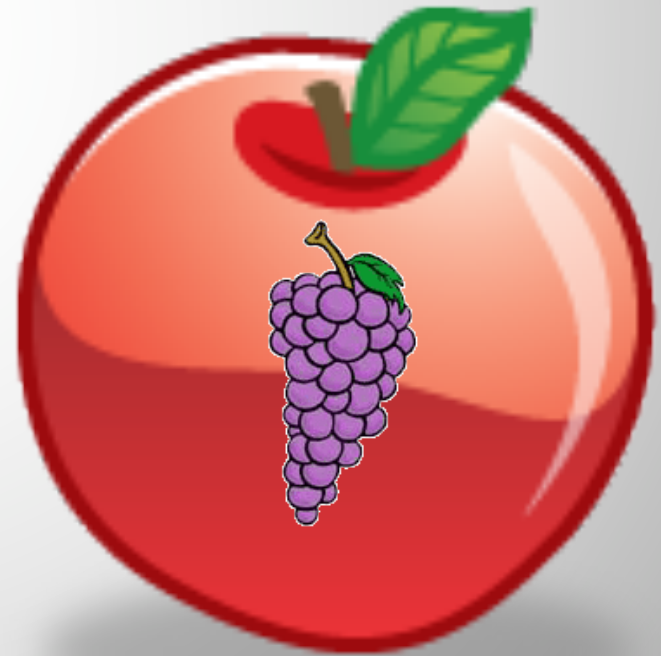
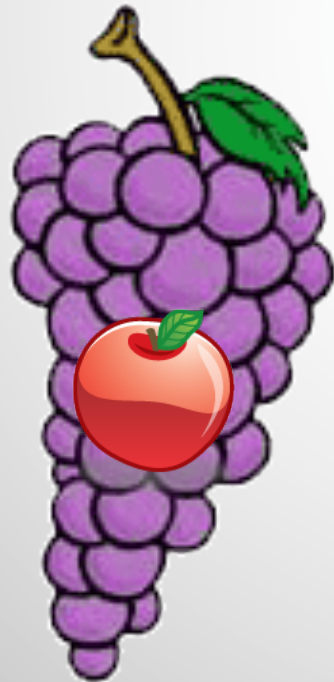


Cross-sample comparison: Delay of gratification tasks

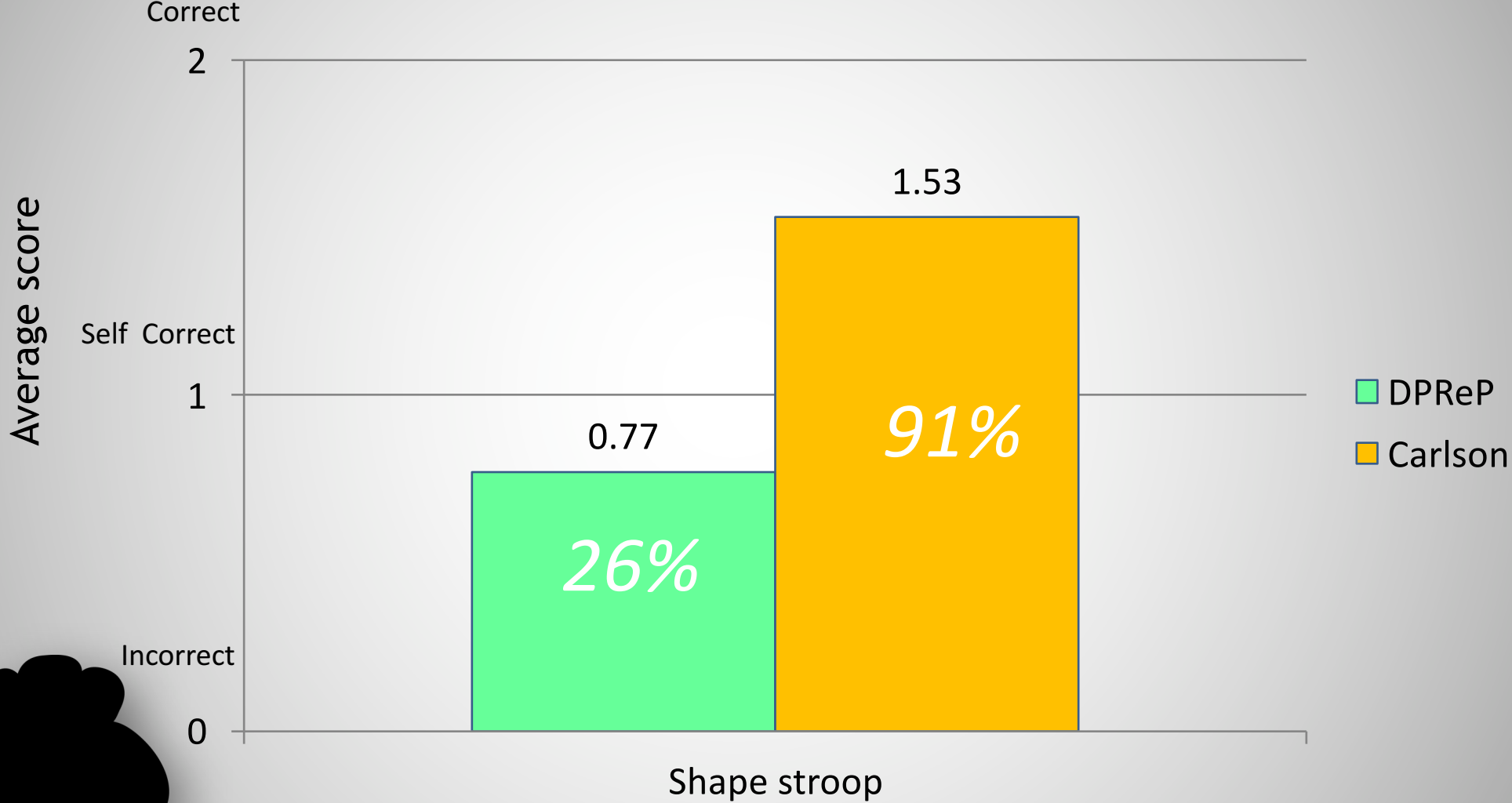


Effortful attention tasks: Fruit Stroop

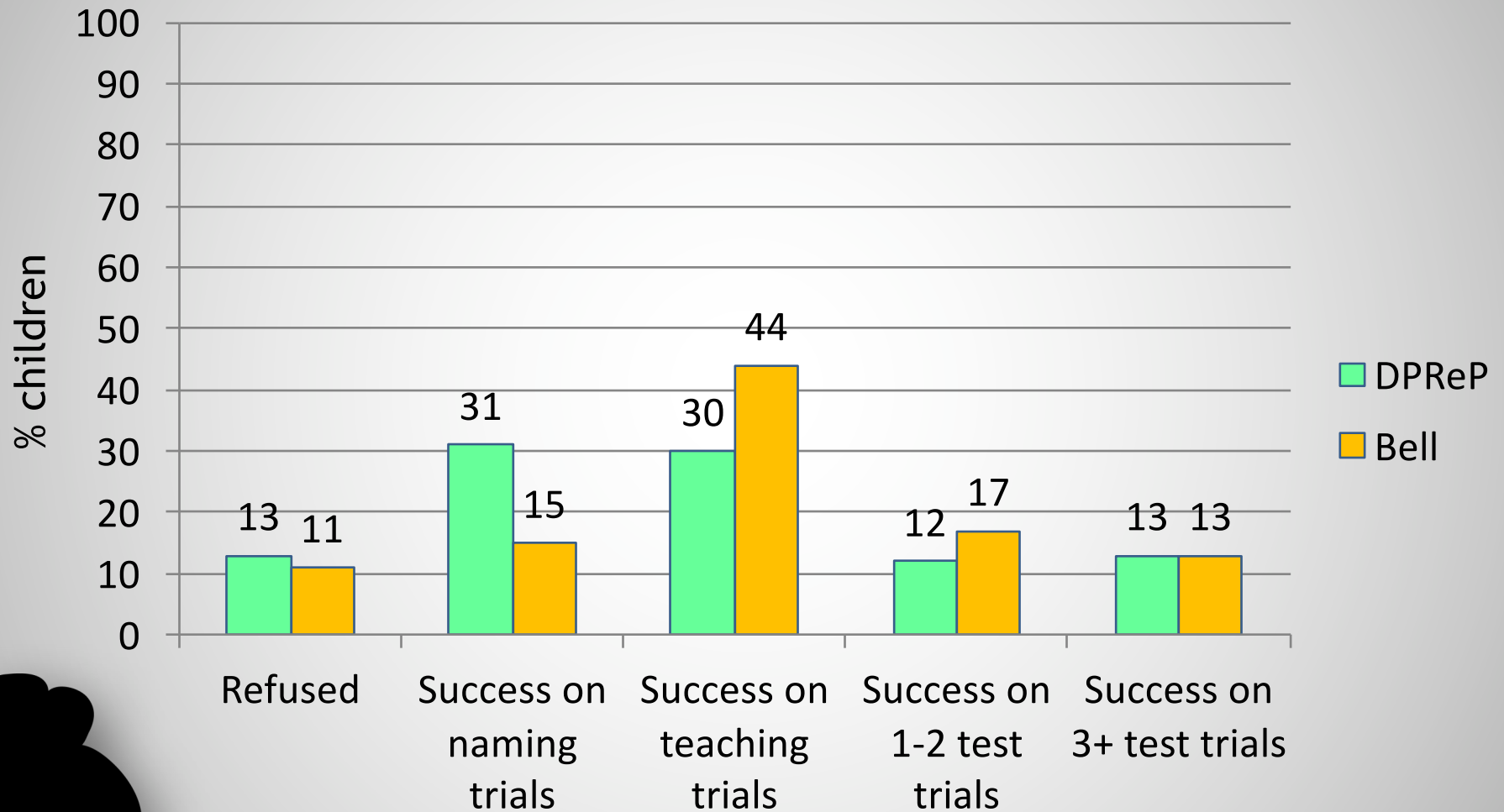
"Show me the baby grapes"



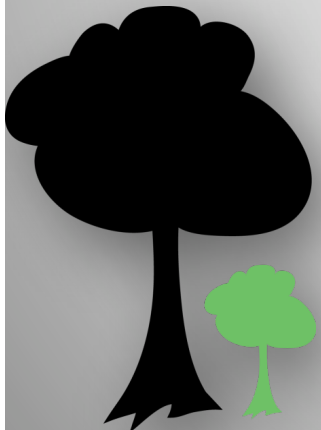
Cross-sample comparison: Effortful attention tasks



Cross-sample comparison: Effortful attention tasks



Fruit Stroop

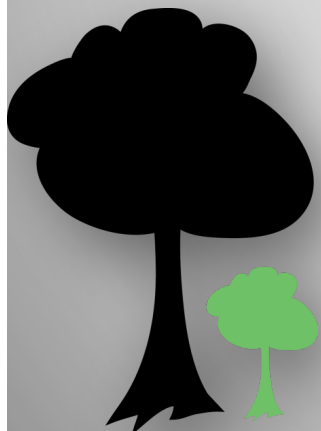


Effortful attention tasks: Mommy & Me

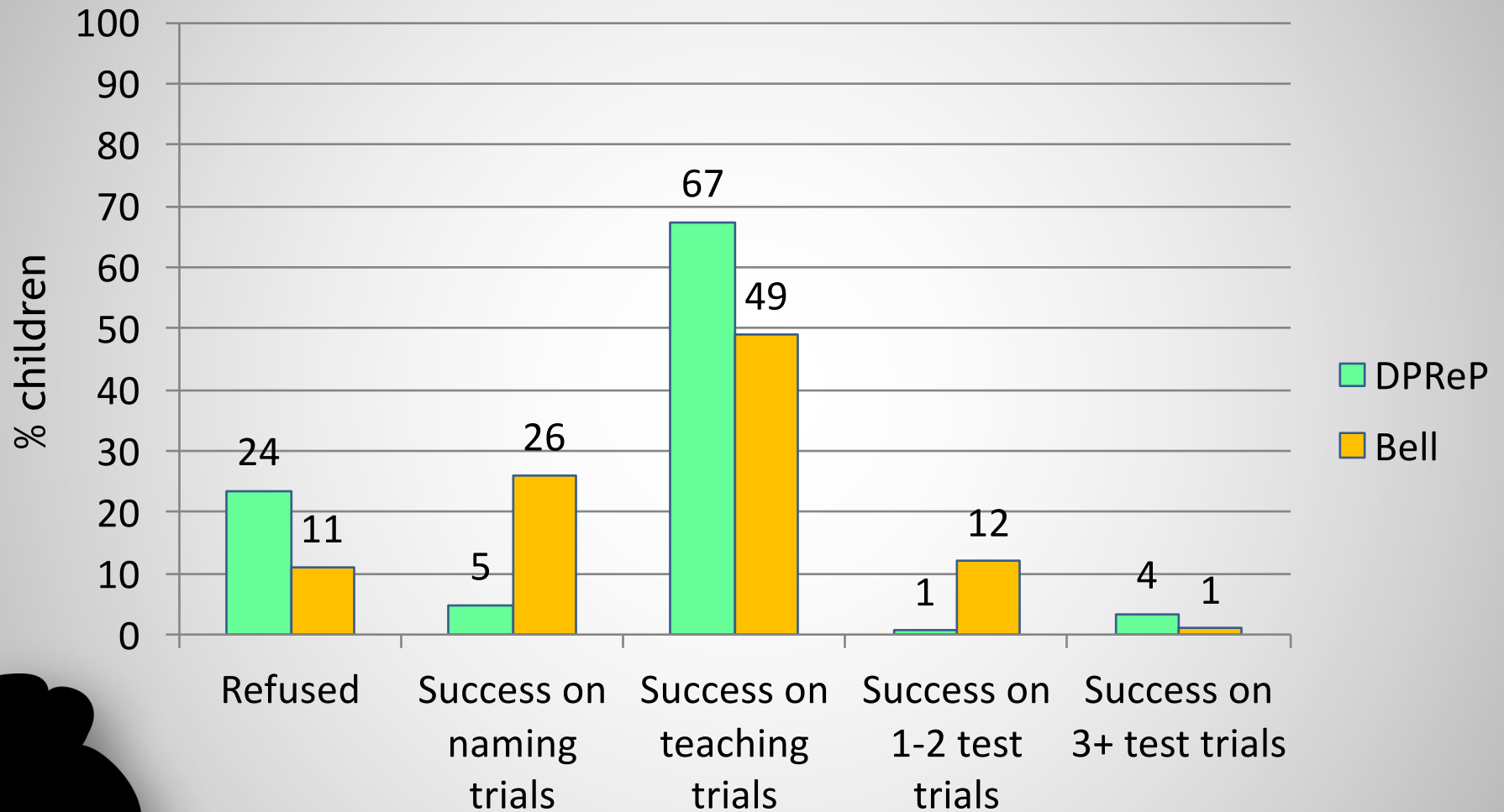
Mommy & Me



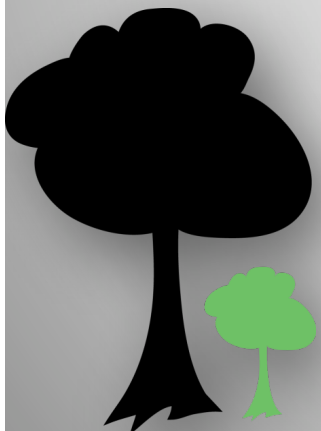
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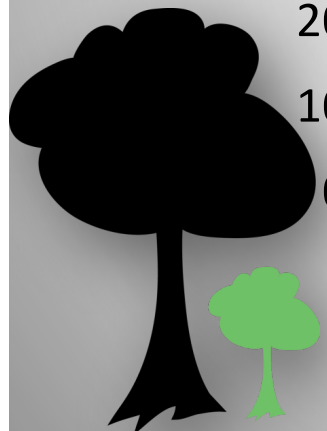
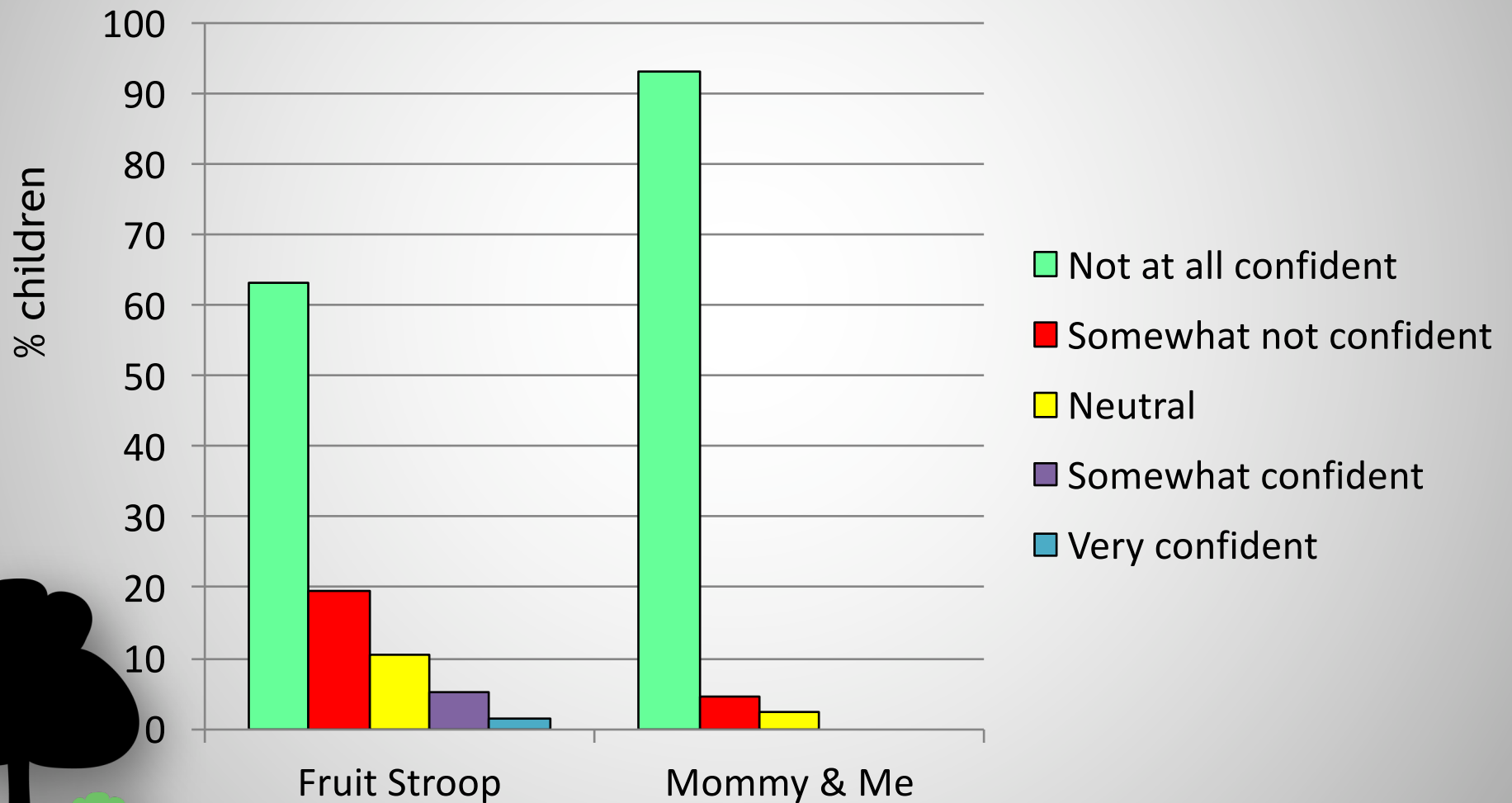
Cross-sample comparison: Effortful attention tasks



Mommy & Me

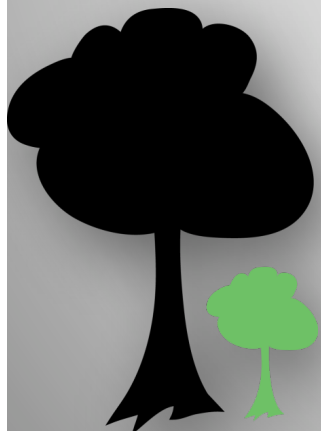


Effortful attention tasks: Confidence in child comprehension



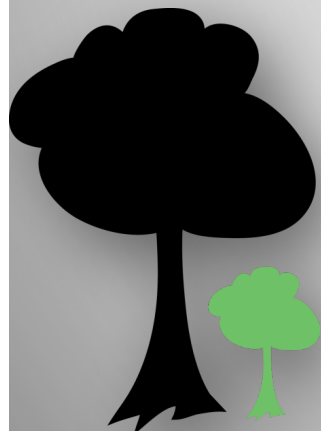
Self Regulation a Component of School Achievement Disparities

- These comparisons suggest that self regulation skills of inhibitory control and executive function lag in poor ethnic minority children.



How is the development of SR shaped by parent-child interaction qualities?

- 15-minute videotaped mother-child and father-child interactions
- Global ratings
 - Sensitivity
 - Intrusiveness
 - Detachment
 - Positive regard
 - Negative regard
 - Child positive engagement



Preliminary Results: Parenting correlates of self regulation

- Greater maternal sensitivity significantly correlated with better self regulation
 - Self regulation measured by a combination of inhibitory control (delay) in snack delay, gift wrap, and forbidden toy tasks
- Associations between maternal sensitivity and self regulation similar for African American and Hispanic children.



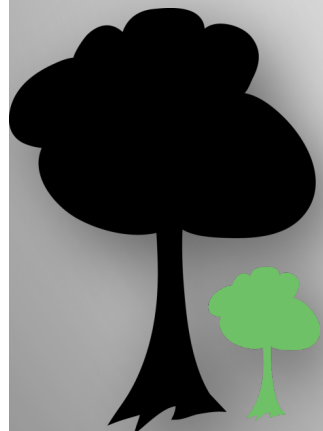
Preliminary Results: Fathering and Self Regulation

- Links conditioned by ethnicity
- Greater paternal sensitivity related to better self regulation among Hispanic children but not African American children
- Note: No differences between Hispanic and African American children in success rates for inhibitory control tasks



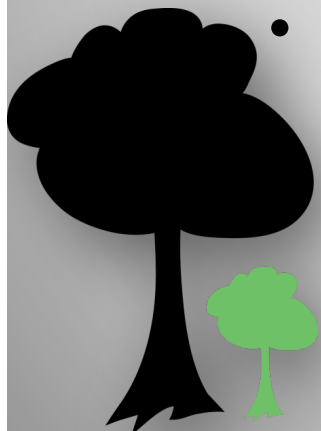
How is the development of SR shaped by the unique ecological niches of minority children?

- Acculturation and the development of effortful attention
 - Carlson & Meltzoff (2008): Bilingual kindergarteners perform better on attention conflict tasks
- Racial socialization
 - A home environment rich in Africentric culture is associated with better cognitive skills in African American preschoolers (Caughy et al., 2002) and first graders (Caughy et al., 2006)



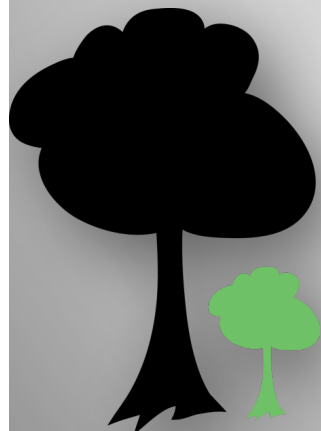
How is the development of SR shaped by the unique ecological niches of minority children?

- Importance of fathers
 - Fathers very engaged
- Unique family/household characteristics
 - Instability of household residents
 - Non-traditional family structures
 - Instability of non-maternal care providers
 - Multiple family households
 - Father involvement varies by ethnicity; varies by seasonal work demands
- Is the association between proximal factors and SR development moderated by contextual factors?



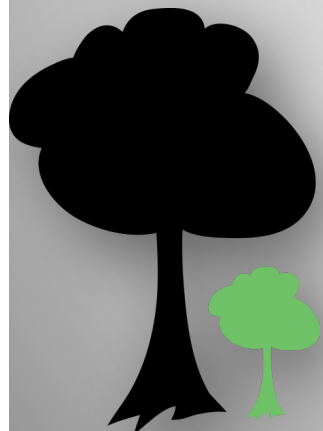
Conclusions and questions

- How well can we generalize what we know about development trajectories of SR to those children most at risk for school failure?
 - Standard SR tasks show variability in low income minority children.
 - How do we best capture subtle individual differences in self regulation skills?
 - Budding signs of inhibitory control at 2 ½ years
 - Little evidence of emerging skills in effortful attention as young as 2 ½ years
 - A focus of intervention?



Conclusions and questions

- In what ways should we broaden our consideration of factors important for the development of executive functions in low income, ethnic minority children?
 - What are sources of additional risk?
 - What are sources of resilience?



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