Early Childhood Predictors of Boys' Antisocial Behavior and Adjustment in Adolescence and Early Adulthood

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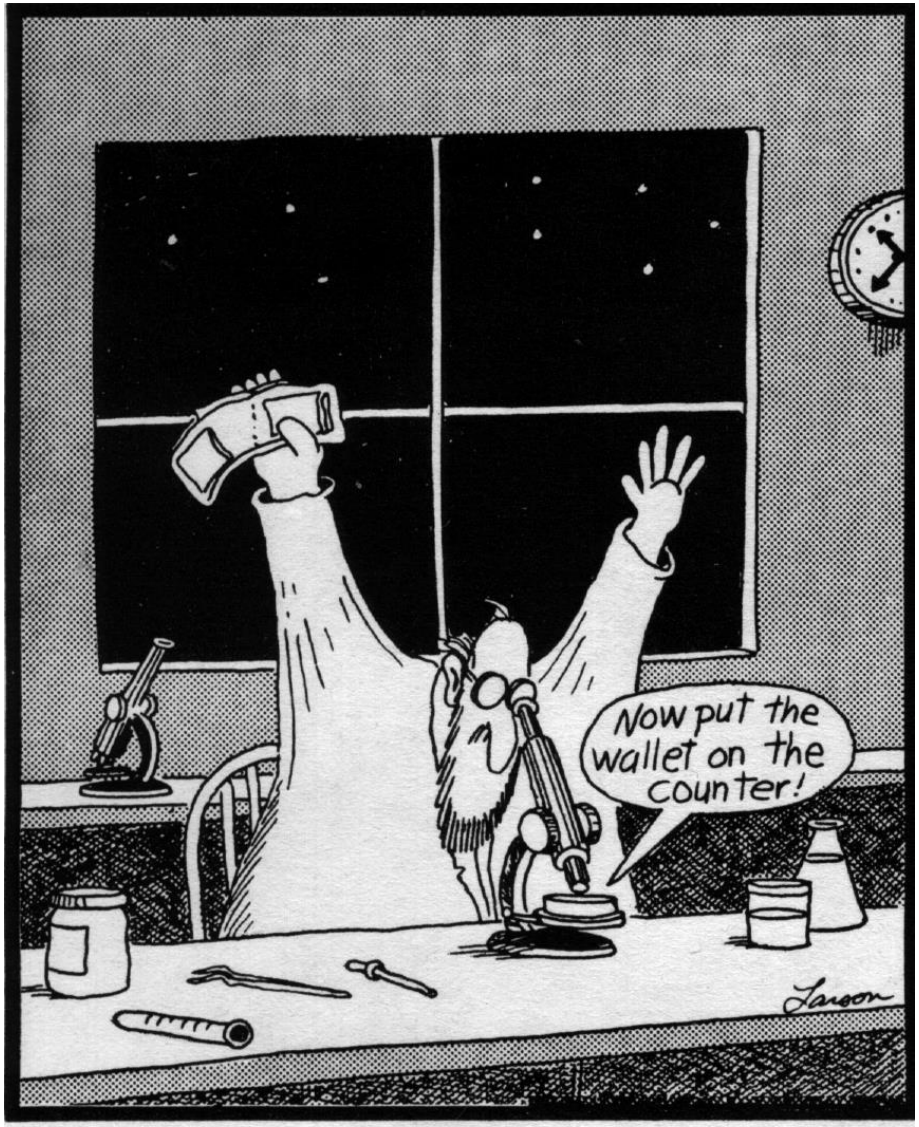
National Institute on Drug Abuse

Aims

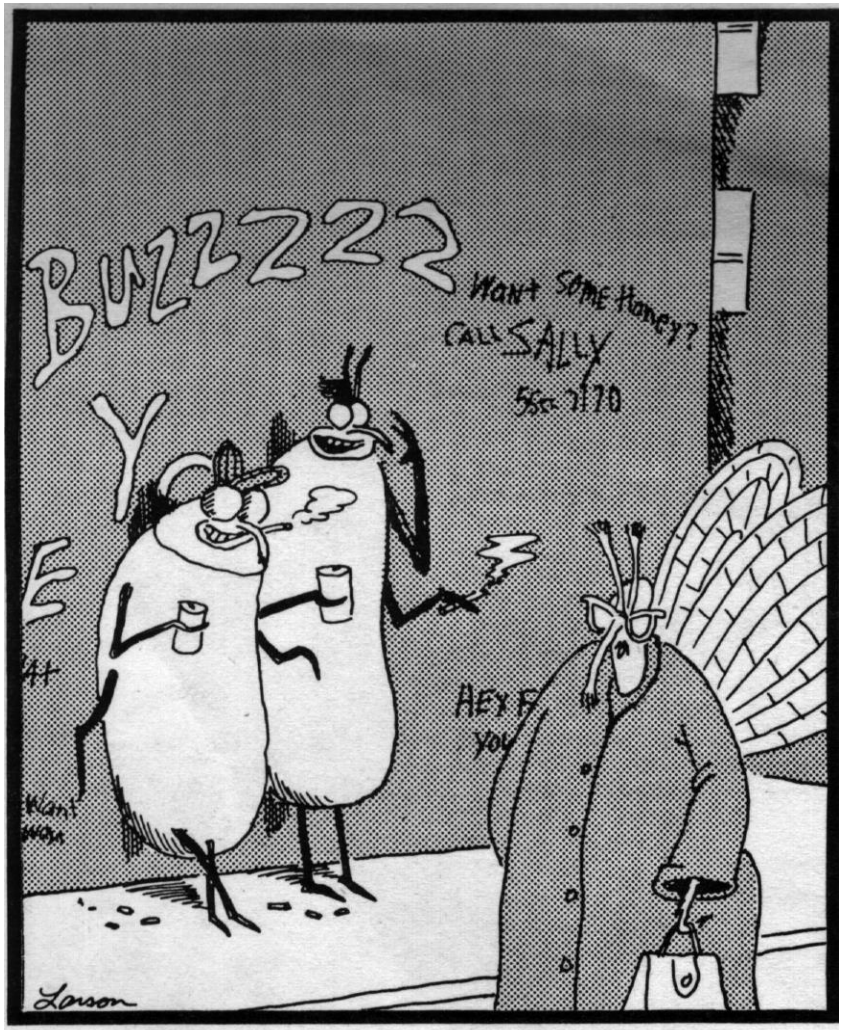
- Describe developmental model of early conduct problems
- Review support for components of model from ages 1 to 20 years
- Briefly discuss implications for further basic and applied work

The Spread Of Antisocial Behavior

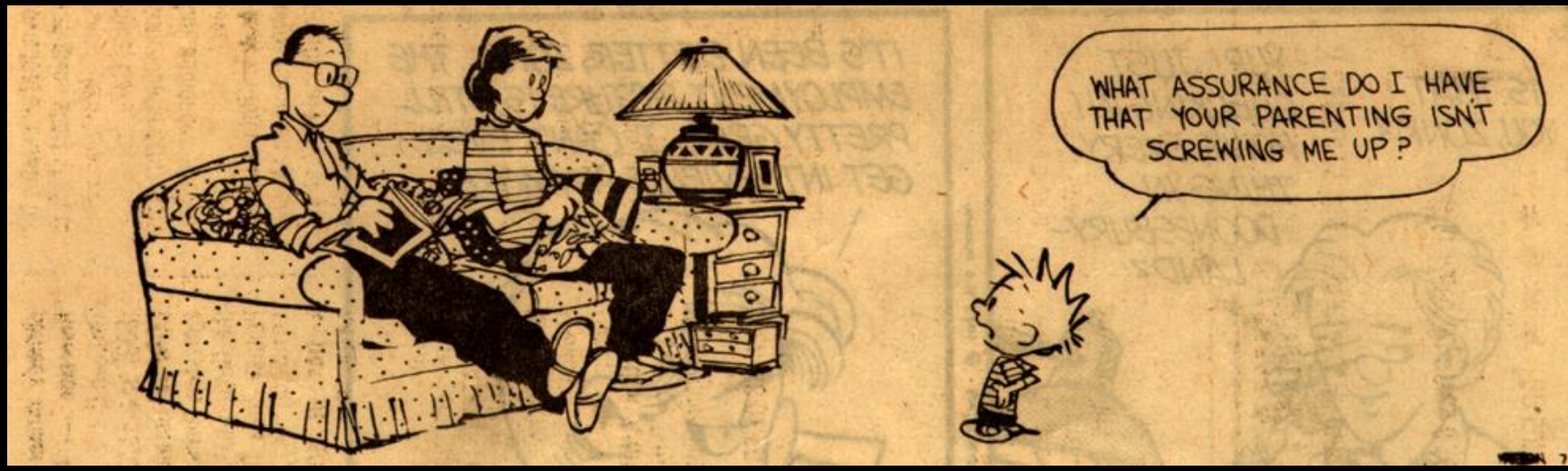


Working alone, Professor Dawson stumbles into a bad section of the petri dish.

Child Effects Model

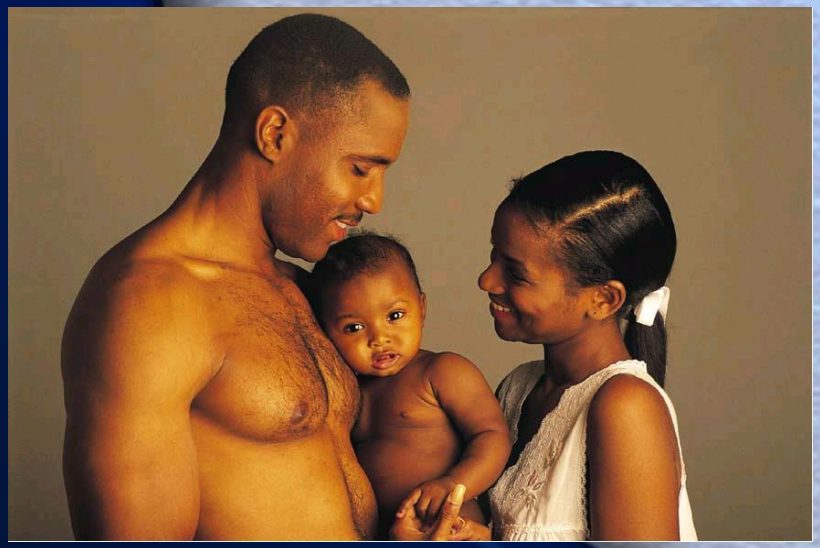


Killer bees are generally described as starting out as larvae delinquents.



Parent Effects Model

Parent, Family, and Neighborhood



Developmental Transformations: 12 to 24 Months

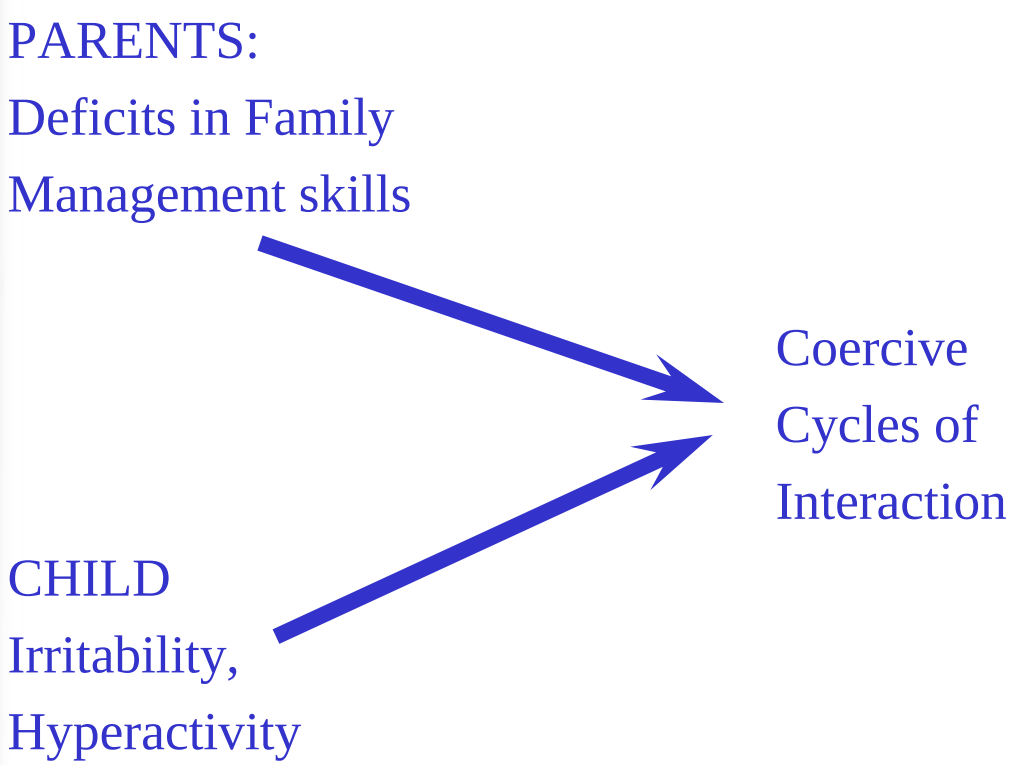
- Increase in undirected anger
- Walking to toddling

12-24 Months: Transition to Physical Mobility

Attachment Theory: Early Starting Conduct Problems (Ainsworth, Sroufe, Greenberg)

- Sensitivity in 1st two years promotes child compliance
- By preschool age, parental requests should be honored differentially based on the quality of the parent-child relationship and the stakes for displeasing parents
- Supports parents making investment in child early on

Patterson's Early Starter Model of Coercion



Demographic Characteristics of Sample

Totals

Sex of child	310 boys
Yearly Income	$12,708
Mother's age	28, range 17-43
Maternal education	12.6 years
% Married/ Living Together	62
% White/Afr. Amer.	53/36
Criminality	36%

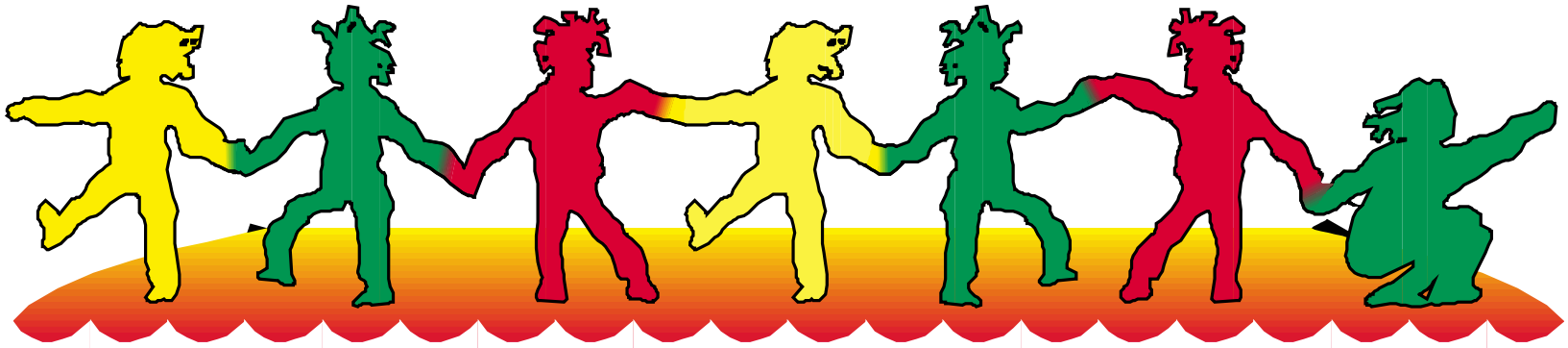
Pitt Mother & Child Project: Follow-Up Schedule

1 yr.	**1.5 yr.**	**2 yr.**	**3.5 yr.**	**5 yr.**	**5.5 yr.**	**6 yr.**	**8 yr.**	**10 yr.**	**11 yr.**	**12 yr.**	**15 yr.**	**17 yr.**	**20. yr**
Lab	Lab	Lab/ Home	Lab	Home Twice	Home	Lab	Home	Home	Lab	Home	Home	Home	Home

---- Camp ----

--- Court Data ---

----------Teacher and School Data -------



83% retention at age 20

Measurement Strategies

- Focus on observation of developmentally salient issues (e.g., maternal responsiveness & infant persistence at age 1, discipline practices at age 2)
- Assess in multiple contexts (e.g., home, lab, summer camp, school) with observations of target child interacting with parents, sibs, peers, best friends, and romantic partners
- Supplement observations with reports of family, child, and community risk factors using multiple family members, peers, best friends, romantic partners, teachers, school and official records

Measures

High Chair Task at 1 yr: Maternal Responsiveness and Infant Persistence

Child Noncompliance at 2 yrs: observed during clean-up task

Behaviorial Inhibition at 2 yrs: In response to distressing gorilla sounds

Parenting Practices at 1.5 & 2 yrs: Hostile/Rejecting based on molecular and global ratings during clean-up task

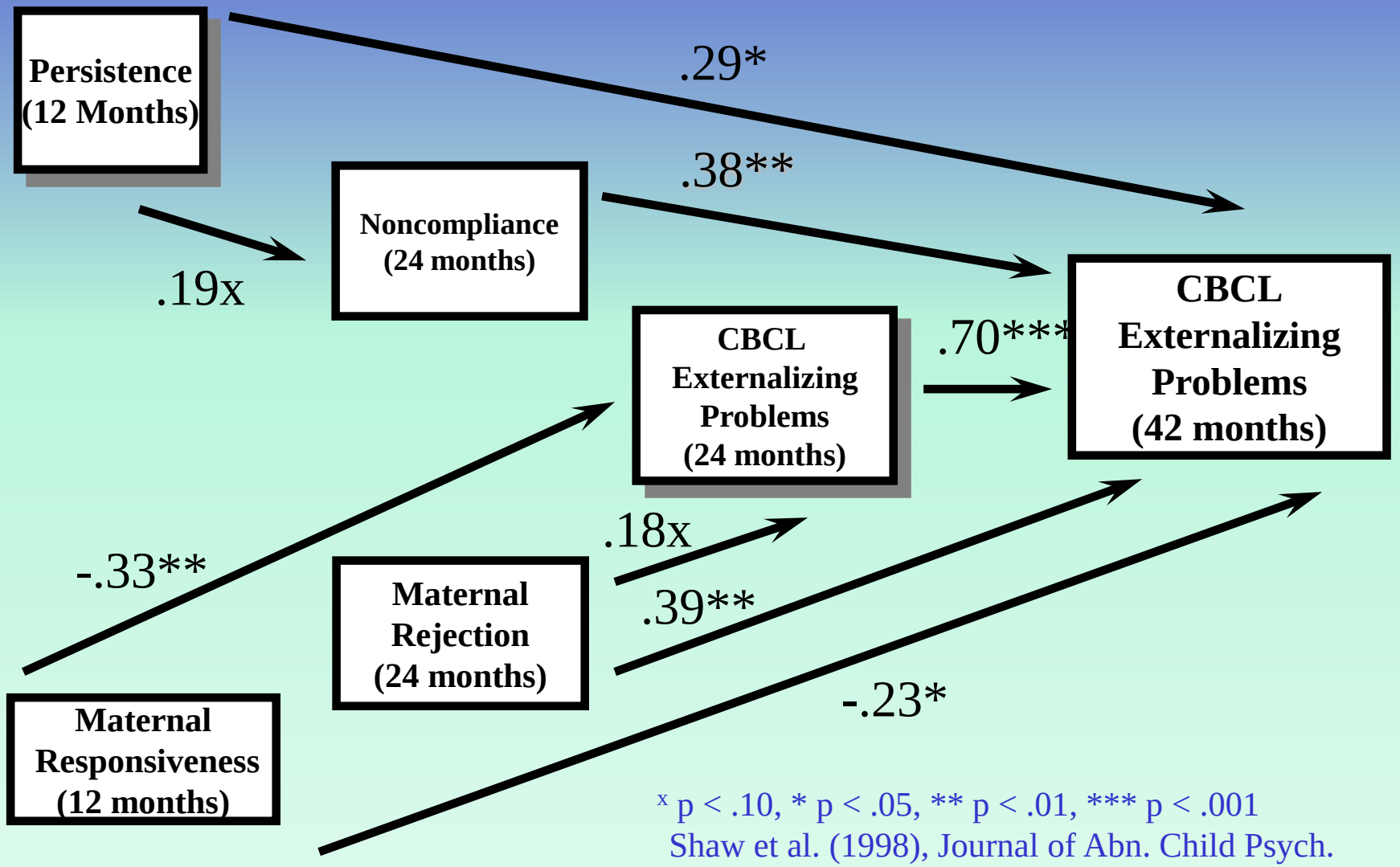
Sibling Conflict at 5 yrs: Verbal and physical conflict between target child and closest-age sib during 1 hour directed play session

Maternal Resources: HOME Acceptance (2 yrs.), Beck Depression Inventory (1.5 to 5 years), General Life Satisfaction (1.5 yrs.), and Parenting Daily Hassles (1, 5, 2, & 3.5 yrs.)

Child IQ at 5.5 yrs: 4 subscales of the WPPSI-R

Achenbach CBCL/TRF at 2, 3.5, 5, 6, 8, 10-12 yrs: Externalizing, Aggression, and other DSM-based factors

Child and Parenting Predictors: Boys

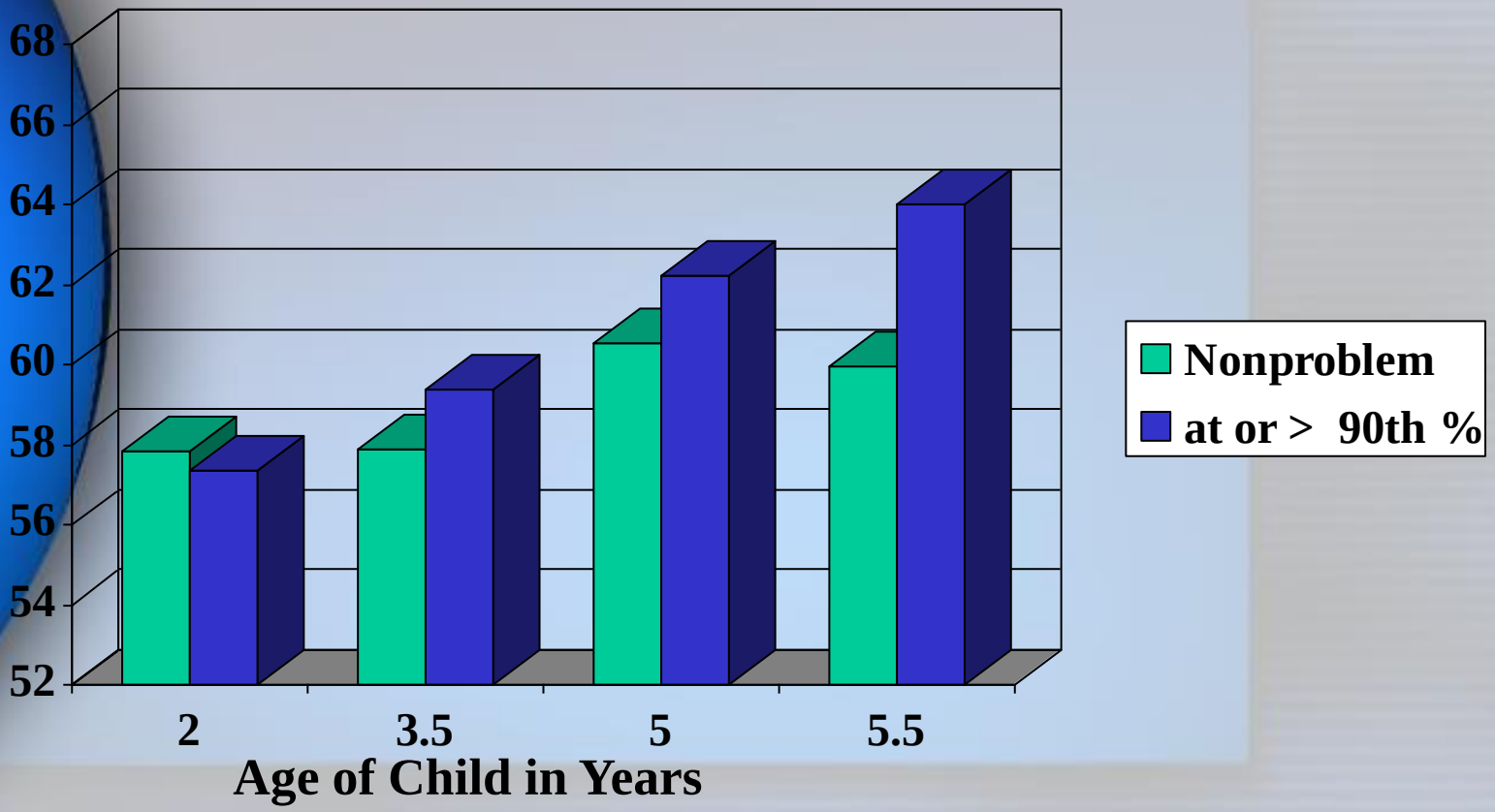


x p < .10, * p < .05, ** p < .01, *** p < .001

Shaw et al. (1998), Journal of Abn. Child Psych.

Trajectories Leading to Clinically-Elevated Scores on TRF Aggression at age 8: CBCL Aggression at Ages 2, 3.5, 5, & 5.5

CBCL Aggression

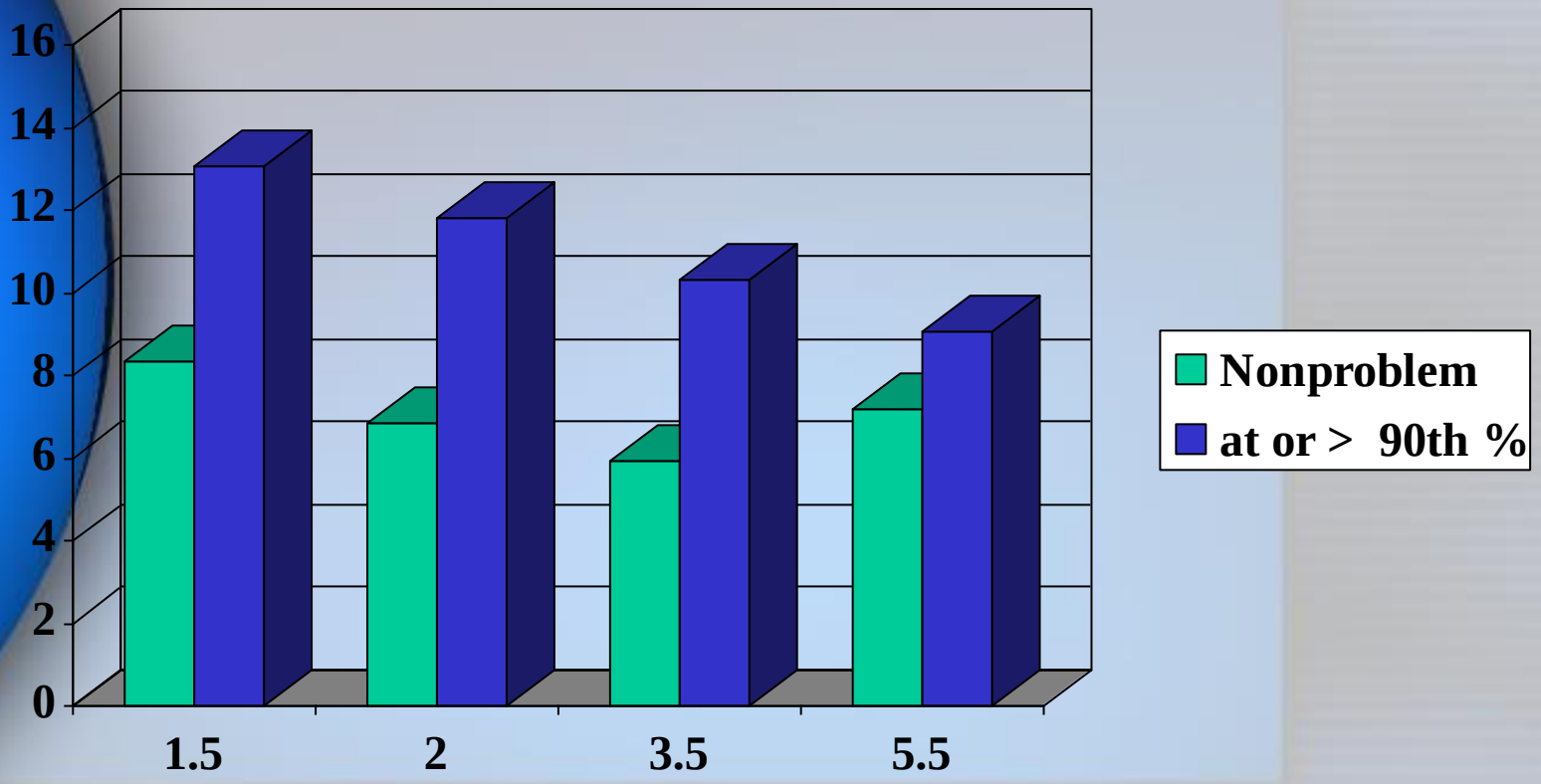


Effect size = -.1 - .48 sd

Shaw, Bell, & Gilliom, Clinical Child and Family Psychology Review (2000)

Trajectories Leading to Clinically-Elevated Scores on TRF Aggression at age 8: Maternal Depressive Symptoms At Ages 1.5, 2, 3.5, and 5.5

Maternal Depressive Symptoms



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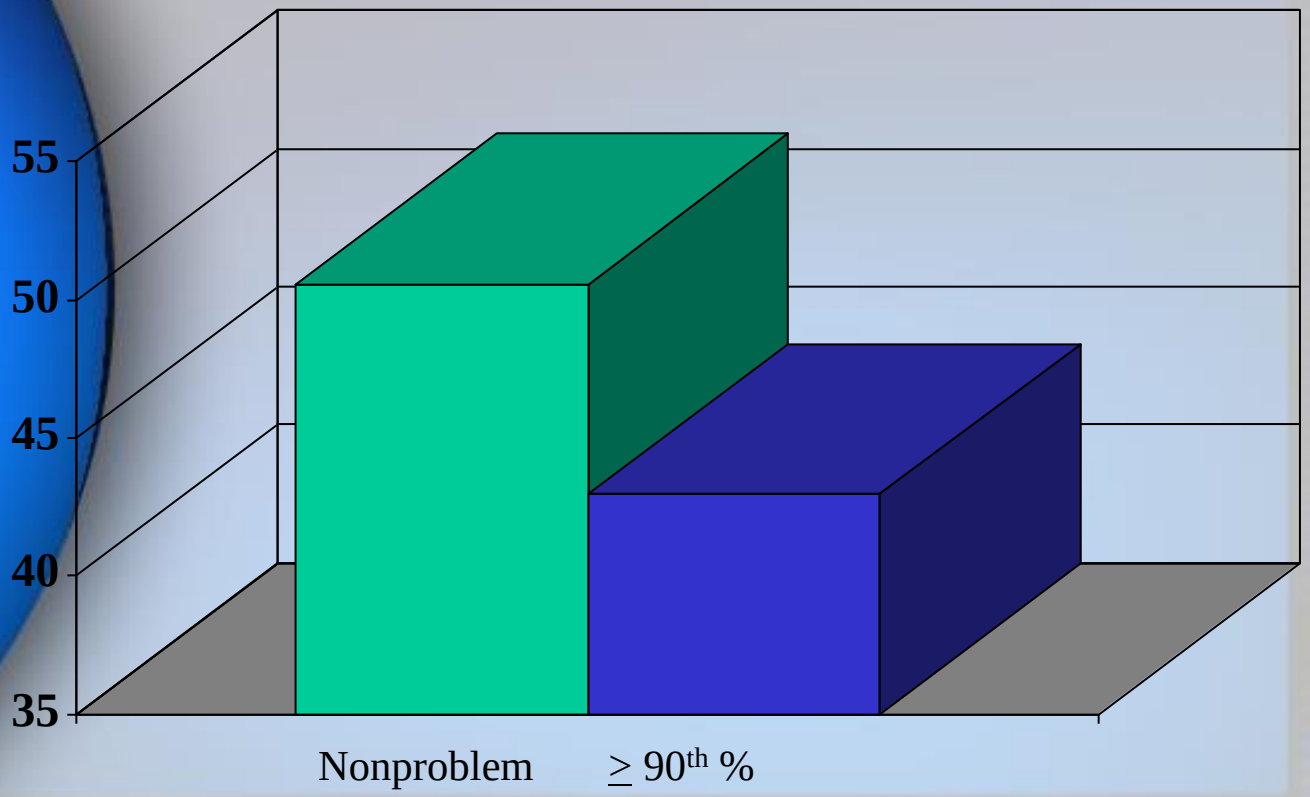
Trajectories Leading to Clinically-Elevated TRF Aggression Scores at Age 8: Maternal Social Support at Age 1.5

Maternal Social Support



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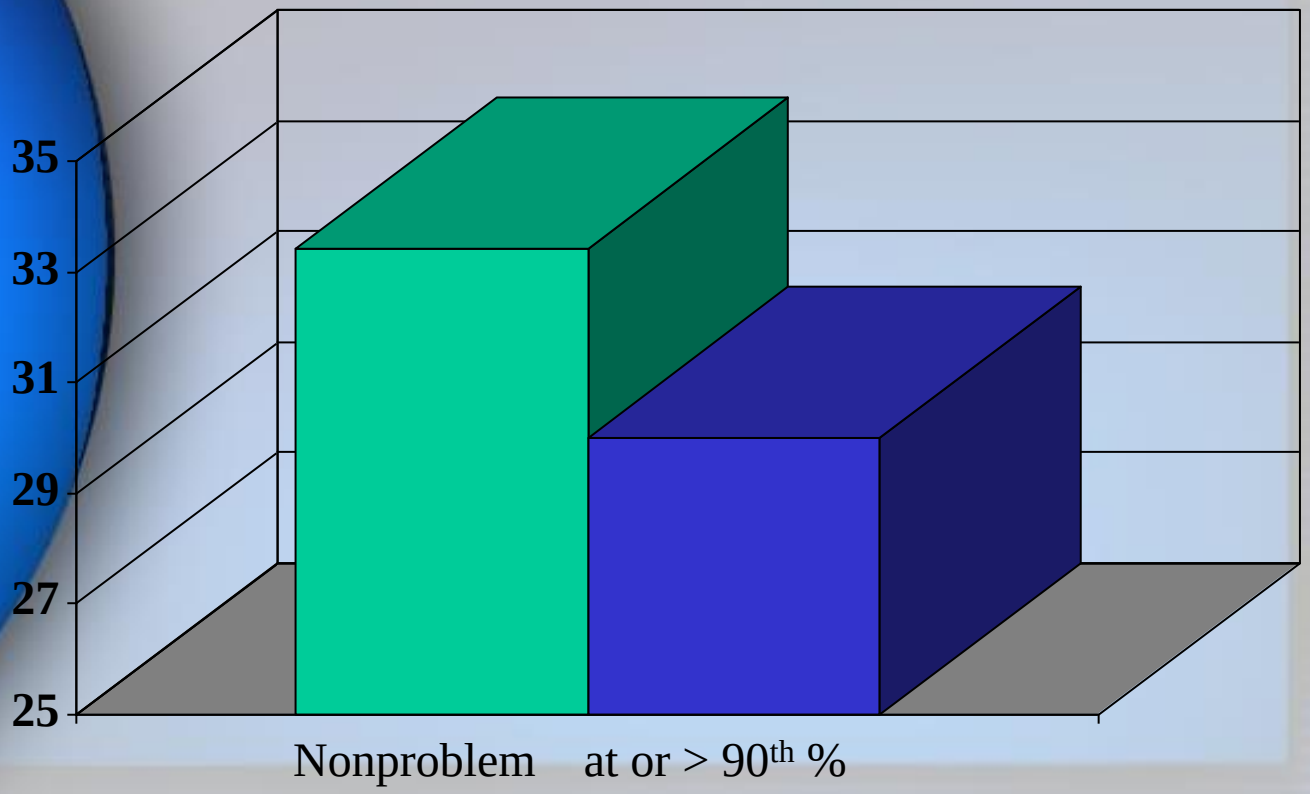
Trajectories Leading to Clinically-Elevated TRF Aggression at age 8: HOME Total at Age 2

HOME Total



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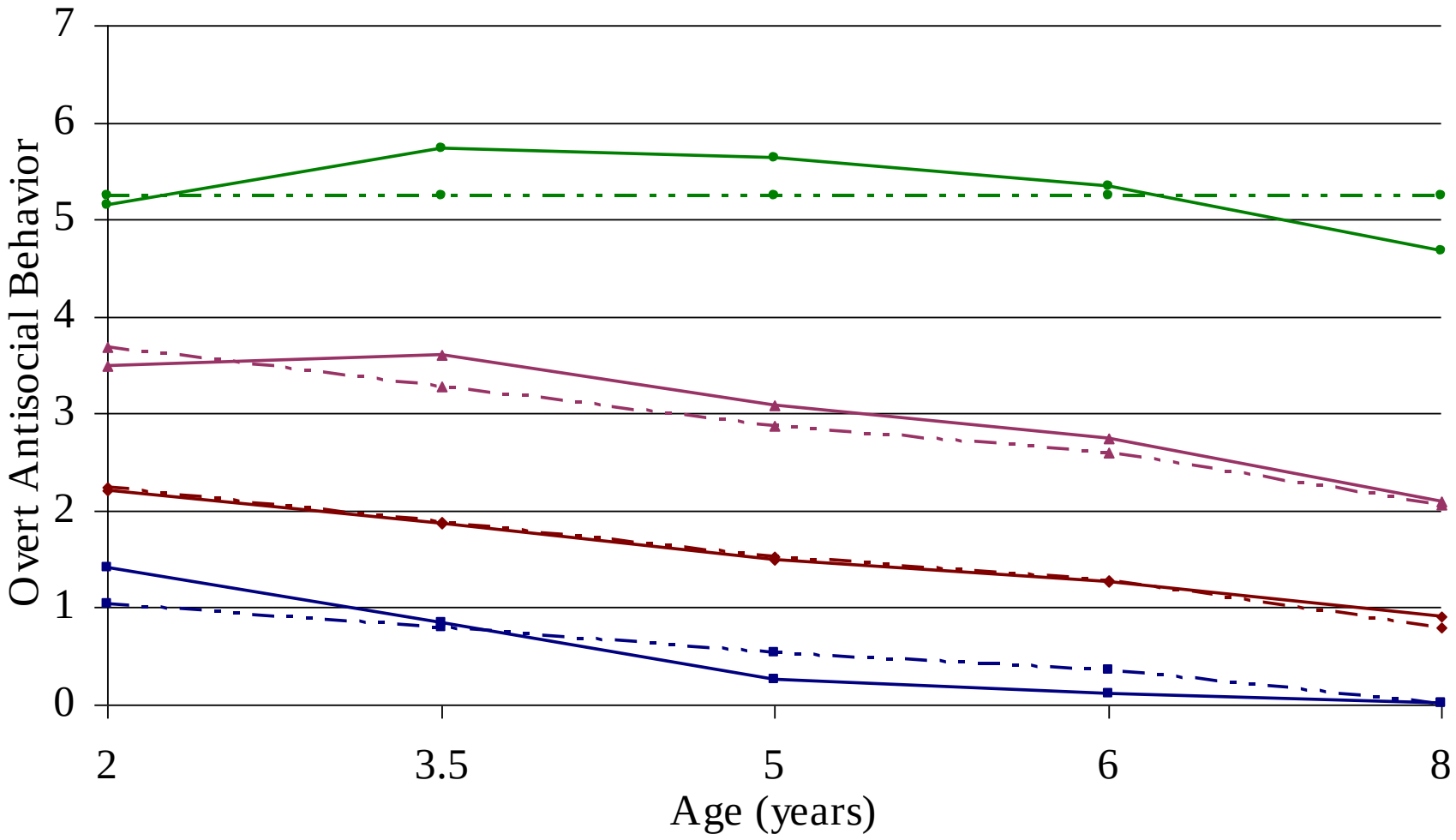
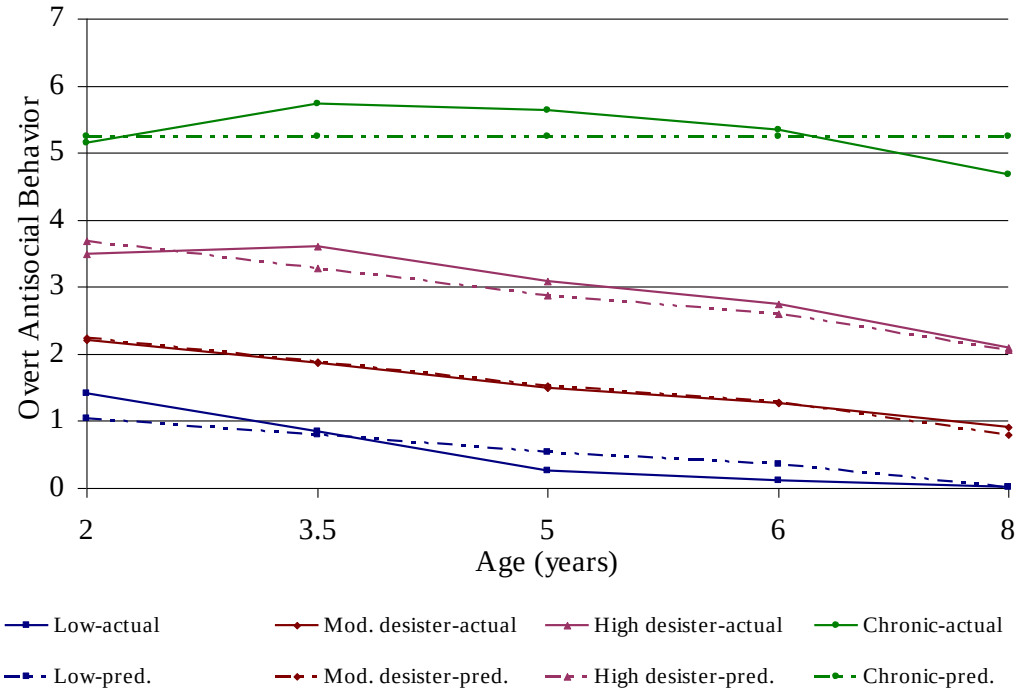
Developmental Trajectories of Overt Antisocial Behavior



Shaw, Gilliom, Ingoldsby, & Nagin (2003), Developmental Psychology

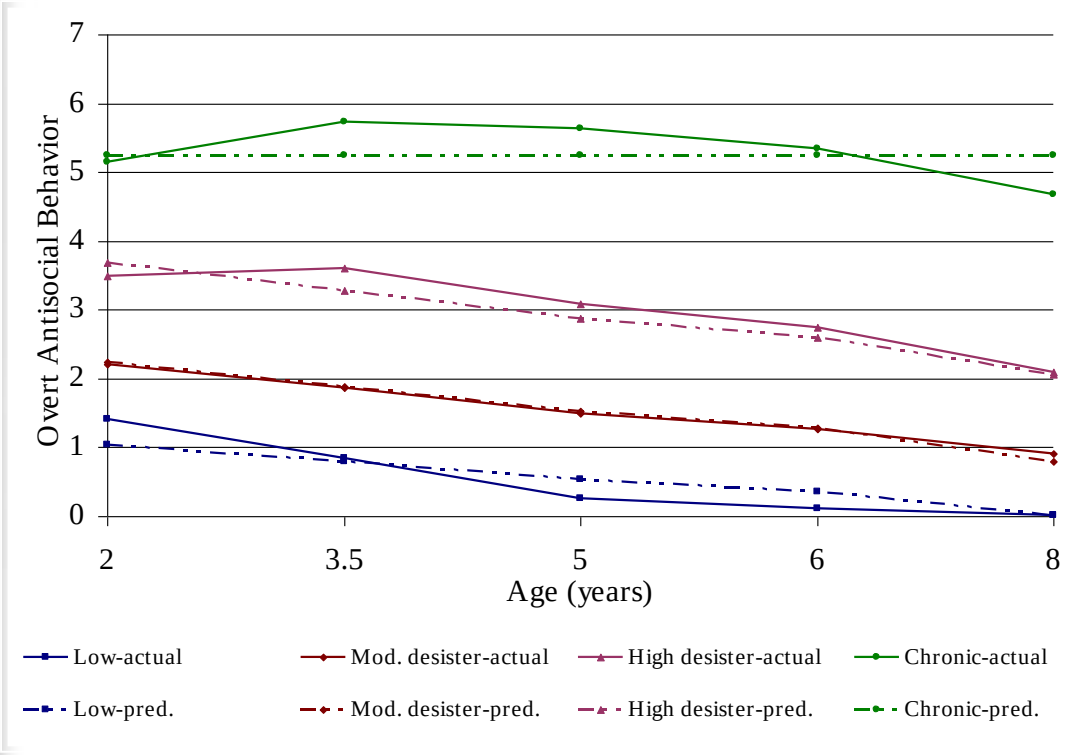
Age 2 Risk Factors that Differentiate Initially High vs. Initially Low Starting Groups

- Including rejecting parenting, child IQ, maternal education, and family income as other predictors:
- Low Behavioral Inhibition
- High Maternal Depressive Symptomatology

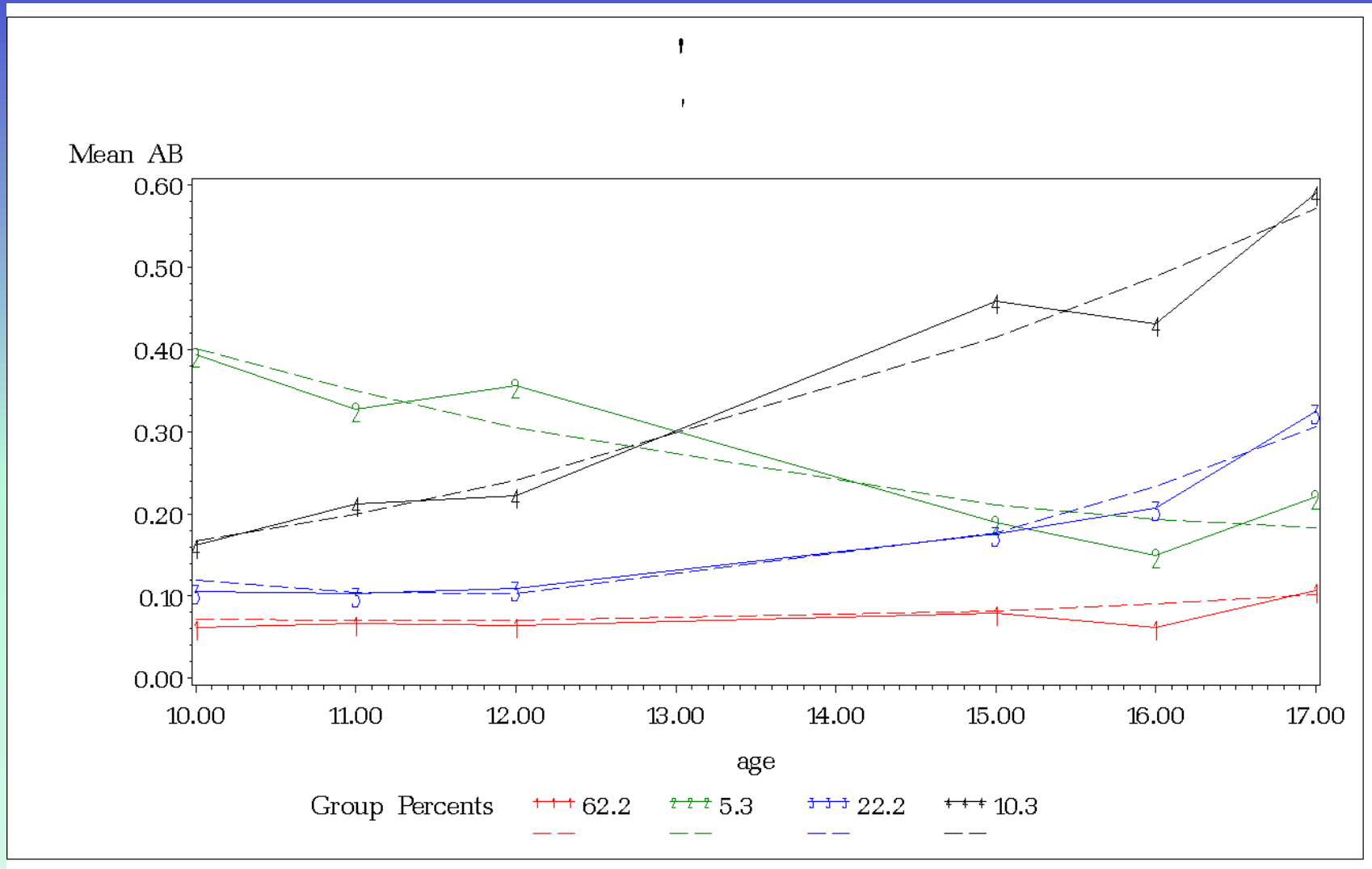


Age 2 Risk Factors that Differentiate Persisters vs. Desisters

- Including child IQ, maternal education, and family income, and maternal depression as other predictors:
- Low Behavioral Inhibition
- High Rejecting Parenting



Developmental Trajectories of Youth Antisocial Behavior Ages 10-17

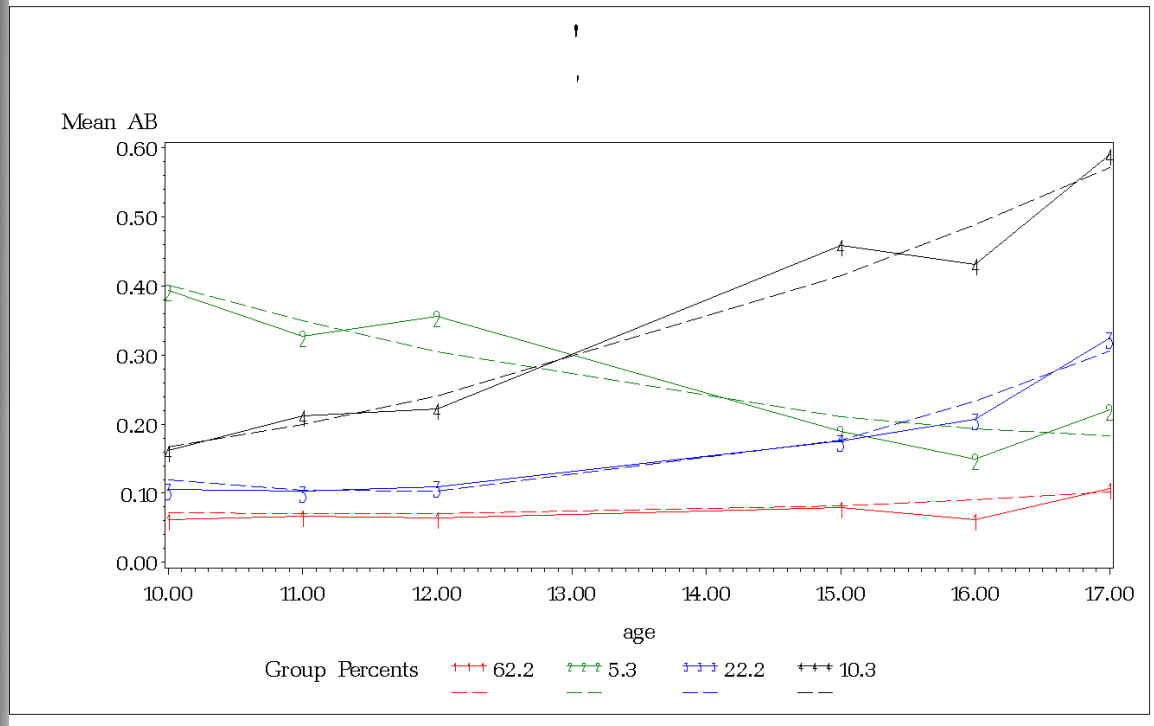


4 group solution with highest BIC score, all posterior probabilities $\geq$ .85

Shaw, Hyde, & Brennan, 2012, *Development and Psychopathology*

Trajectory Group Differences on Juvenile Court Petitions

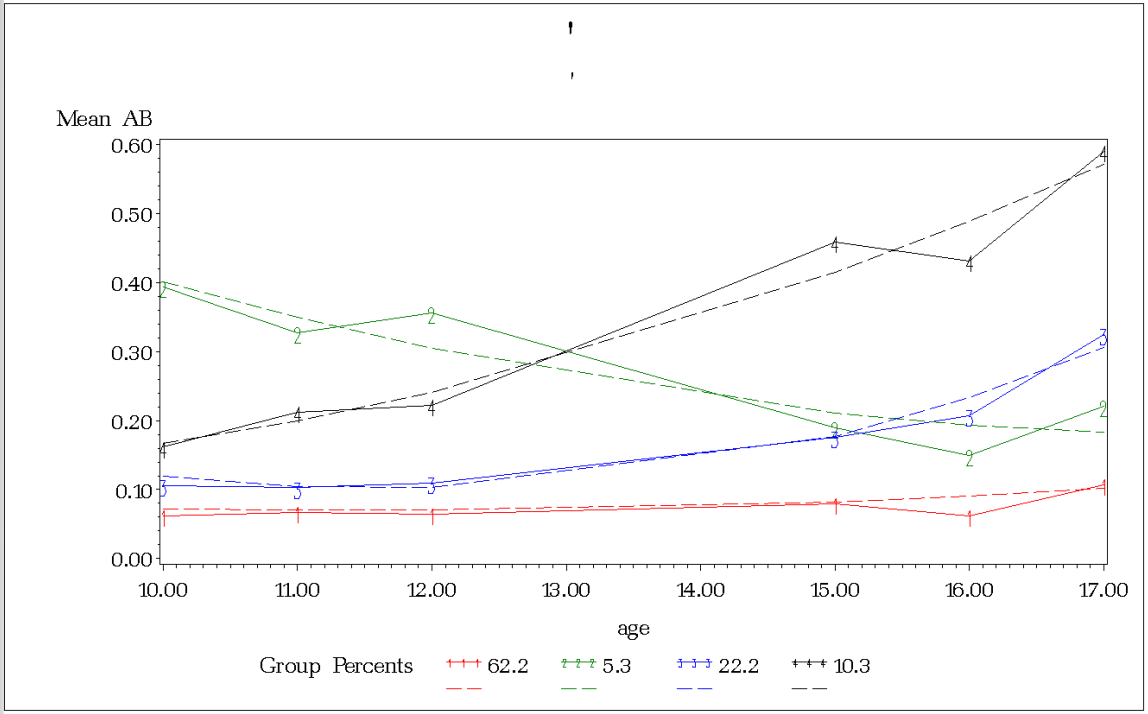
- Low Stable -- 62% of sample: 25%
- High ‘Decreasing’ -- 5% of sample: 60%
- Late Increasing --10% of sample: 49%
- High Increasing -- 22% of sample:78%



Trajectory Group Differences based on *Early Childhood* Risk Factors

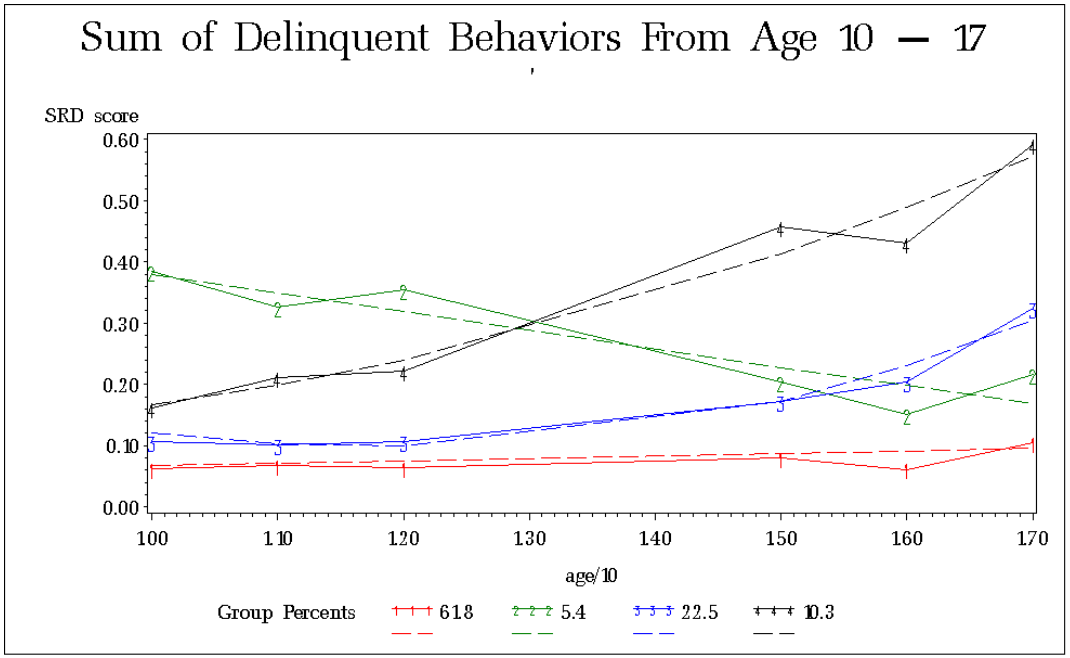
Accounting for predictors in early childhood,

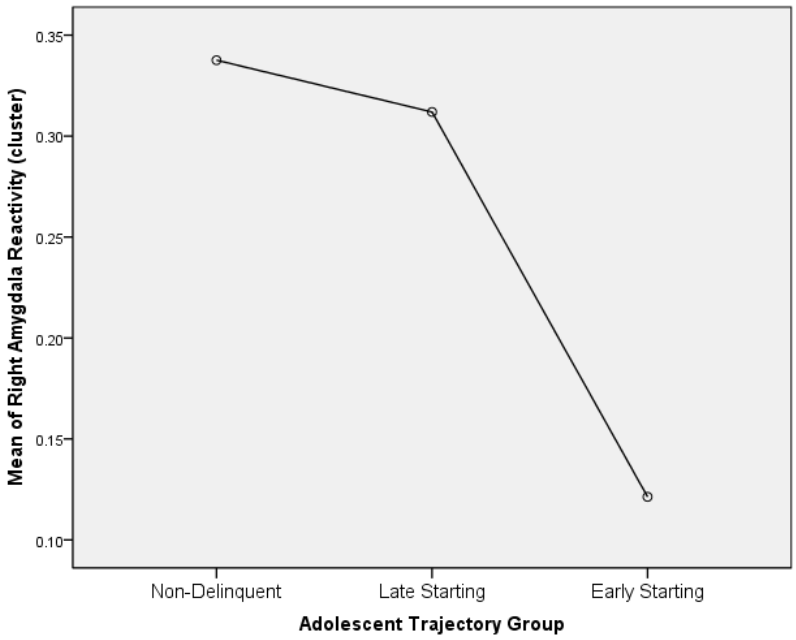
- Factors that discriminated high increasers from low stable: *maternal depression* at ages 1.5-3.5 years
- Factors that discriminated 'high decreasing' group: *rejecting parenting and maternal depression*

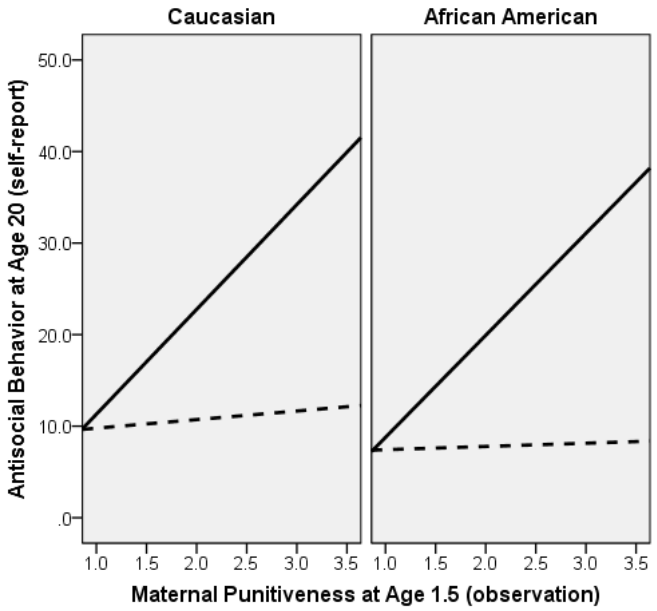


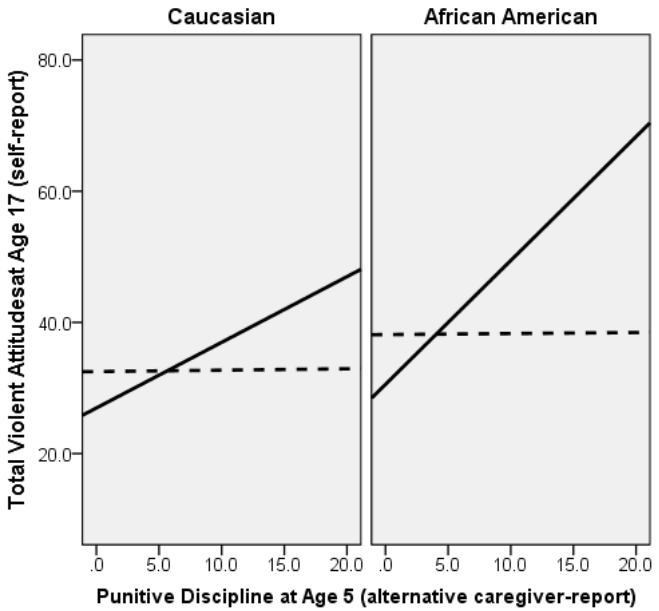
Shaw et al., *Development and Psychopathology*, 2012

Amygdala reactivity and AB Trajectory Groups (N = 51)

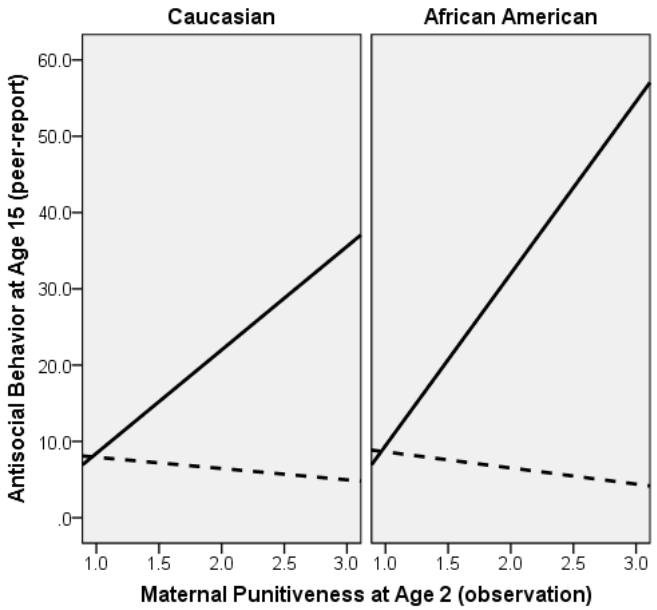


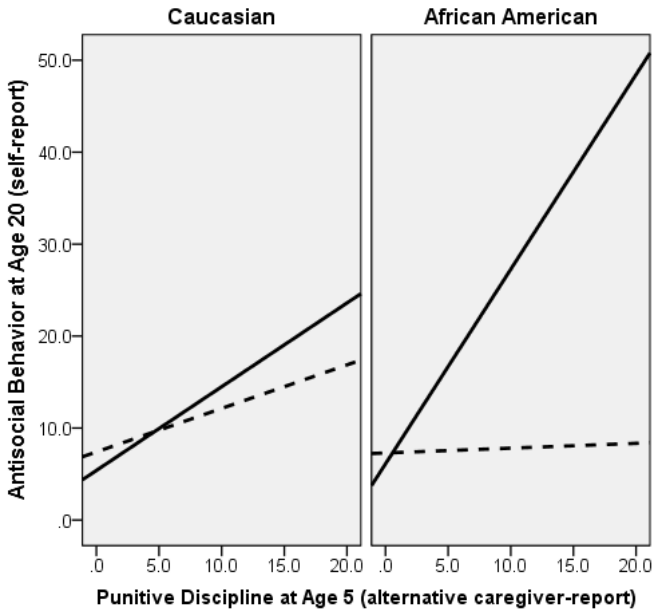






——— Low *MAOA* Activity - - - - - - - High *MAOA* Activity





Choe, Shaw, & Hyde., 2014, *Clinical Psychological Science*

Early Childhood Predictors of Serious Violent* Behavior in Adolescence

- Early childhood factors that discriminated:
  - Nonoffenders vs. nonviolent offenders
    - Family income
  - Violent offenders vs. nonoffenders
    - Family income, oppositional behavior, emotion regulation (ER), minority status
  - Violent vs. nonviolent offenders
    - Rejecting parenting, oppositional behavior, ER

*homicide, forcible rape, sexual/physical assault, robbery, arson, weapons possession

Sitnick, Shaw et al., in press, *Child Development*

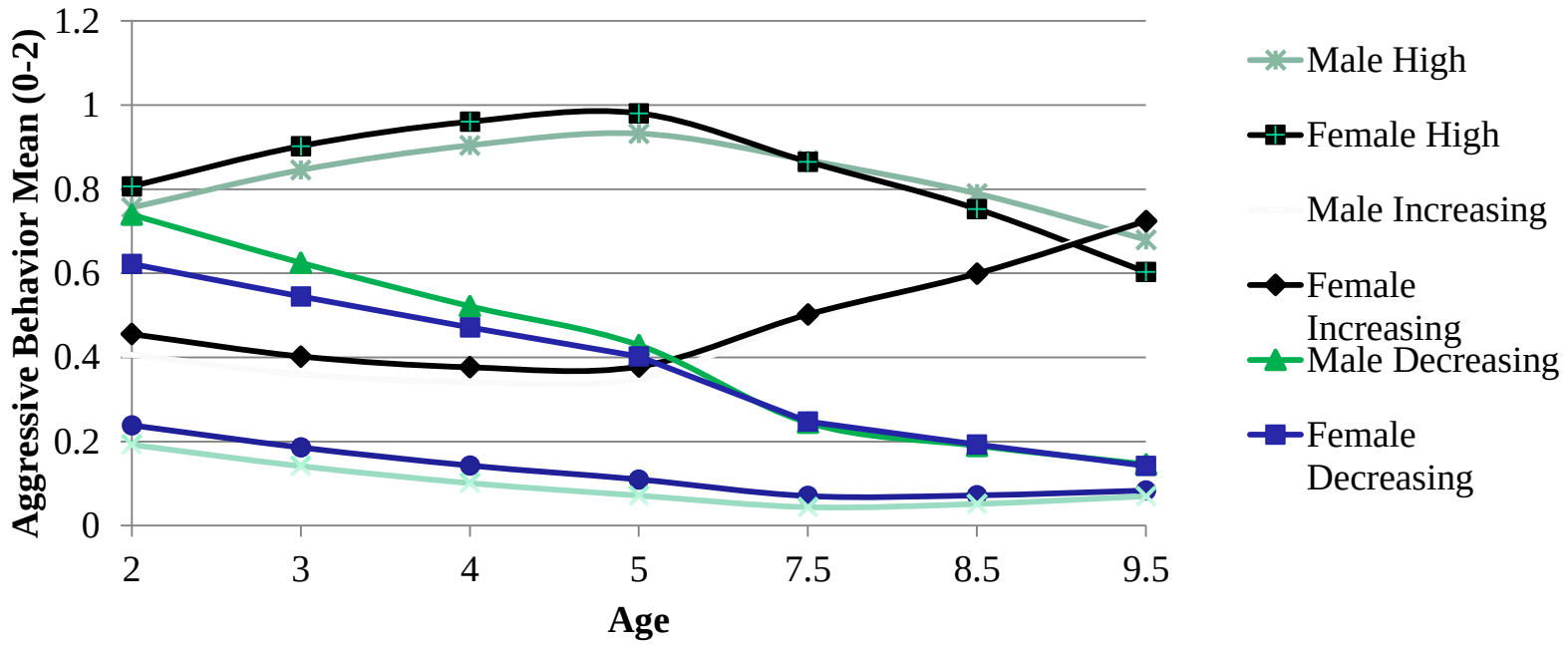
Sex Differences in Risk for School-Age Conduct Problems

- Male sex: a robust risk factor for CP (Moffitt et al., 2001; Rutter et al., 2003)
  - **Risk factor prevalence**
    - Do boys have higher levels of risk factors than girls?
      - Findings that boys have higher levels of child-level risk (e.g., inhibitory control,language delays) than girls (Moffitt, 1993; Messer et al., 2006)
      - Contextual risk differences less clear (e.g., harsh parenting)
  - **Risk factor threshold**
    - Are associations between risk factors and conduct problems stronger in boys than in girls?
      - Inconsistent findings (Moffitt et al., 2001; Lahey et al., 2006; Fergusson & Horwood, 2002)

Early Steps Multisite Sample

- Participants
  - 731 children and families recruited from Women, Infants, and Children Nutrition Programs at 3 sites
  - High-risk: ≥1 SD above mean in 2 of 3 domains
  - 28% African American, 50% European American, 13% biracial, and 9% other
  - In-home assessments: 2, 3, 4, 5, 7.5, 8.5, 9.5, 10.5
    - Parent reports, structured interaction tasks, examiner interview
  - Randomly assigned to the Family Check-Up at age 2
    - Intervention assignment used as a control

Developmental Trajectories of Aggression from Ages 2 to 9.5



Brennan & Shaw, 2015

Developmental Trajectories of Aggression from Ages 2 to 9.5

Aggression class distribution and means known-class solution (together)

Class	Males N (%)	Females N (%)	Aggressive behavior mean (range) M	F
High	49 (13.3)	25 (6.9)	.83 (.6-1.23)	.84 (.65-1.32)
Increasing	38 (10.5)	33 (9.1)	.47 (.31-.71)	.49 (.27-.80)
Decreasing	83 (22.5)	72 (19.9)	.44 (.24-.80)	.39 (.26-.70)
Low	199 (53.9)	232 (64.1)	.14 (0-.4)	.10 (0-.35)

Aggression class distribution and means from separate sex solutions

Class	Males N (%)	Females N (%)	Aggressive behavior mean (range) M	F
High	48 (13.0)	26 (7.2)	.83 (.6-1.23)	.83 (.65-1.32)
Increasing	37 (10.0)	32 (8.8)	.46 (.31-.70)	.47 (.27-.80)
Decreasing	86 (23.3)	72 (19.9)	.44 (.24-.8)	.40 (.26-.70)
Low	198 (53.7)	232 (64.1)	.14 (0-.4)	.10 (0-.32)

Comparisons of Child and Contextual Factors by Child Sex

Risk Factor	Male Mean (% meeting risk)	Female Mean (% meeting risk)	Significance
Child Factors			
Language	**-.11 (27.9%)**	**0.07 (22.4%)**	***p* < .01**
Inhibitory control	**3.88 (29.5%)**	**4.06 (19.6%)**	***p* < .01**
ADHD	1.14 (31.4%)	1.10 (26.8%)	*p* < .10
Fearlessness	2.97 (17.6%)	2.91 (13.5%)	*ns*
Cumulative Risk	**1.07**	**0.82**	***p* < .001**
Contextual Factors			
Engagement	0.23 (25.5%)	0.23 (24.0%)	*ns*
Coercion	0.25 (25.2%)	0.24 (24.3%)	*ns*
Depression	17.20 (44.4%)	16.29 (38.4%)	*ns*
Education	5.23 (21.1%)	5.16 (26.0%)	*ns*
Income	3.72	3.84	*ns*
Cumulative Risk	1.16	1.13	*ns*

Summary of Findings

- For boys, child and parenting precursors identifiable from 1.5-2 years of age, stronger than for girls
  - Both independent and interactive effects of parenting and child
- Factors that compromise parenting also related to persistence of conduct problems
  - Maternal depression, social support
- For male and female toddlers identified at high-risk for early conduct problems, boys' higher risk for persistently high trajectories based on child risk, but no differences in magnitude of associations for boys and girls with similar levels of early CP

Discussion

- Overall results suggest importance of identifying at-risk boys in early childhood
  - Based on greater vulnerability to contextual risk factors
  - Higher levels of child risk (language, inhibitory control)
  - Consistent with literature on boys' higher rates of host of neurodevelopmental disorders (LD, autism, ADHD), stillbirths and death in first year
- How to engage such families?