

# **Development of Physical Aggression: Exploring the Relationship with Language**

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# Introduction

- Violence literature has focused on outcomes such as arrests or convictions among adolescents
- Physical aggression leading to adolescent and adult violence develops prior to a child entering school
- High levels of physical aggression in early childhood is an important predictor of both adolescent and adult offending, including violent offending

# Introduction

- Deciding when to implement interventions so that they are successful is a challenging task, but crucial if we are to prevent individuals from developing into “life-course persistent offenders”

# Introduction

- Advances in our understanding of violence will emerge from examining the development of the behavior, focusing both on when the behavior begins to develop, and the mechanisms that lead to desistence or persistence of the behavior

# Development of Physical Aggression

- Physically aggressive behavior begins to emerge during infancy
- Rates are highest and fluctuate between 2-4 years of age and then generally decline
- Most children learn to control their physically aggressive behavior by school age

# Developmental Trajectories

- Not all children follow the same trajectory
- 4-10% of children are identified who engage in high, persistent rates of physical aggression
- Children who continue to show high levels of physical aggression very early in life are those most at risk for violent offending during adolescents

# Language

- As language develops, children shift from predominantly physical aggression to predominantly verbal aggression
- Link between language and aggressive behavior at various ages in development
- Low language skills was a significant predictor of adult criminal behavior
- “Learning to use language to convince others to satisfy your needs may be the most important protective factor against chronic levels of physical aggression” (Tremblay, 2006, p. 19)

# Theoretical Framework

## ➤ “Learning to Control”

Children do not learn to become physically aggressive during adolescence, rather they learn how NOT to be aggressive, and this regulation begins very early in life (Tremblay, 2000)



# Gender Differences

- During infancy similar rates of physical aggression among males and females
- Lack of consensus on gender differences during preschool years
- School age males have higher rates than females
- Gender differences in language-physical aggression relationship

# Specific Aims

- 1) Investigate the development of physical aggression between 2 and 6 years of age
- 2) Examine the relationship between physical aggression and language
- 3) Explore gender differences in rates of physical aggression and the language-aggression relationship

# Hypotheses

- Physical aggression will decline for most of the sample
- Inverse relationship between language and physical aggression
- Children high on aggression at both ages will have the lowest language scores
- Children high on aggression at age 2, but not at age 6, would demonstrate an increase in language over the 4 year period

# Sample

➤ **Design:**

Secondary data analyses from the Memphis New Mothers Study

➤ **Setting:**

Regional Medical Center in Memphis, Tennessee from June, 1990 through August, 1991

➤ **Sample:**

Eligibility criteria included: women less than 29 weeks pregnant, no previous live births, no chronic illnesses, and at least one of the following: no high school diploma; unmarried; or currently unemployed

# Methods

- Data from the age 2 and age 6 waves of assessment were used for these analyses
- At each assessment, mothers and their children came into the study office and completed the interview assessment and testing measures

# Sample (N=430)

	<u>MEAN</u>	<u>SD</u>
Mother's Age (years)	18.06	(3.23)
Discretionary household income* (per month)	\$1,671	(\$6890)
Married		<u>%</u> 2
Mother's Race:		
African American	92	
Caucasian	8	
Employed	8	
Graduated High School	29	
Child Gender (boys)	51	

\*Annual household discretionary income was based on income subsistence standards for Medicaid eligibility, reported household income, and the number of individuals in the household.

# Measures Age 2

- Language was assessed using the Bayley Scales of Infant Development (BSID)-Mental Development Index (MDI)
- Physical aggression was measured using 3 items from the CBCL aggression subscale
  - Physically attacks others
  - Fights with others
  - Hits others

# Measures Age 6

- Language was assessed using the Peabody Picture Vocabulary Test (PPVT-R)
- Physical aggression was measured using 3 items from the CBCL aggression subscale
  - Physically attacks others
  - Fights with others
  - Cruel, bullying or meanness to others



# Physical Aggression

➤ Three items scored:

0=Never; 1=Sometimes; 2=Often

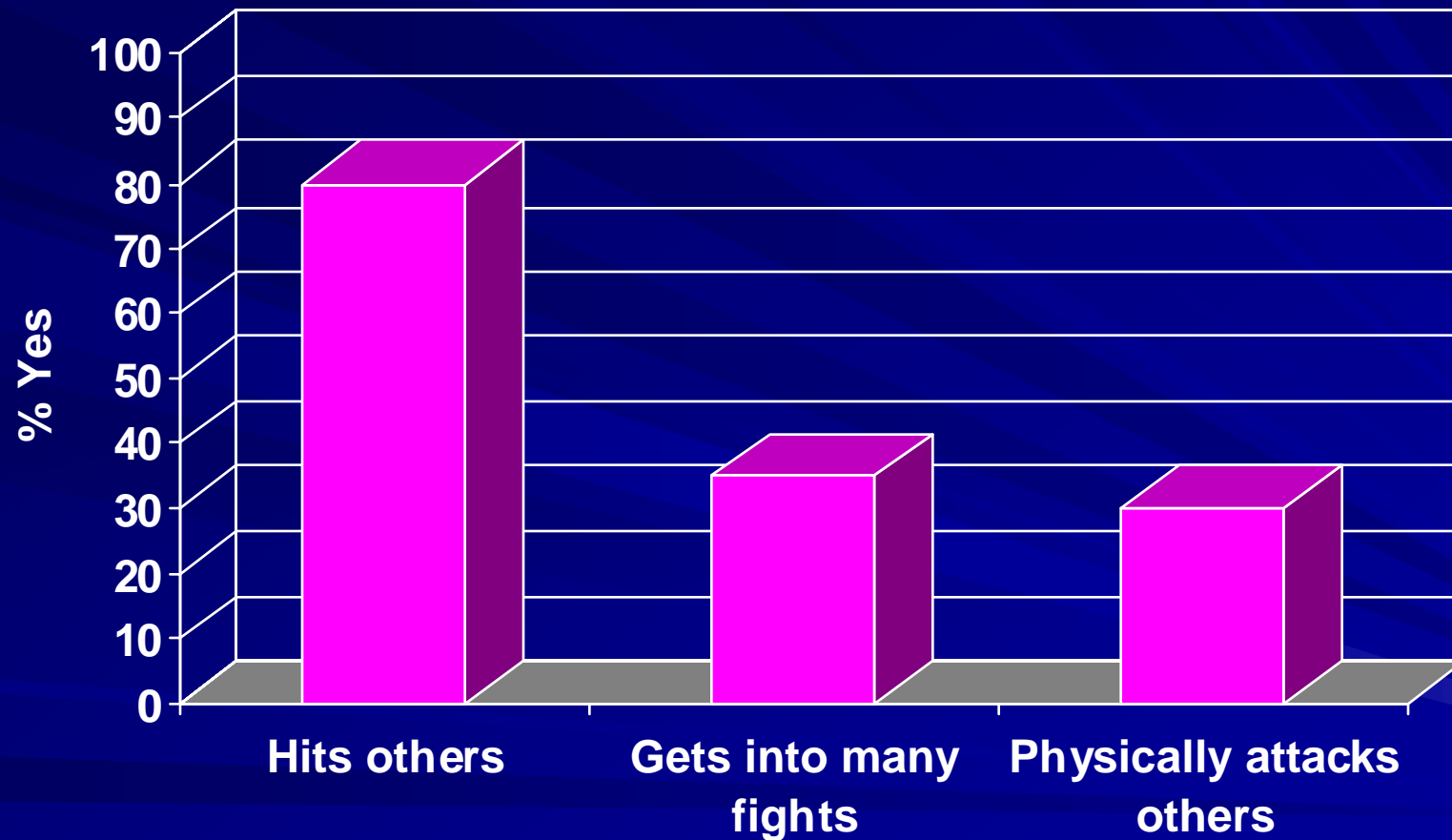
➤ High aggression subgroup

➤ Age 2:  $\text{sum} \geq 4$

➤ Age 6:  $\text{sum} \geq 2$

# Results

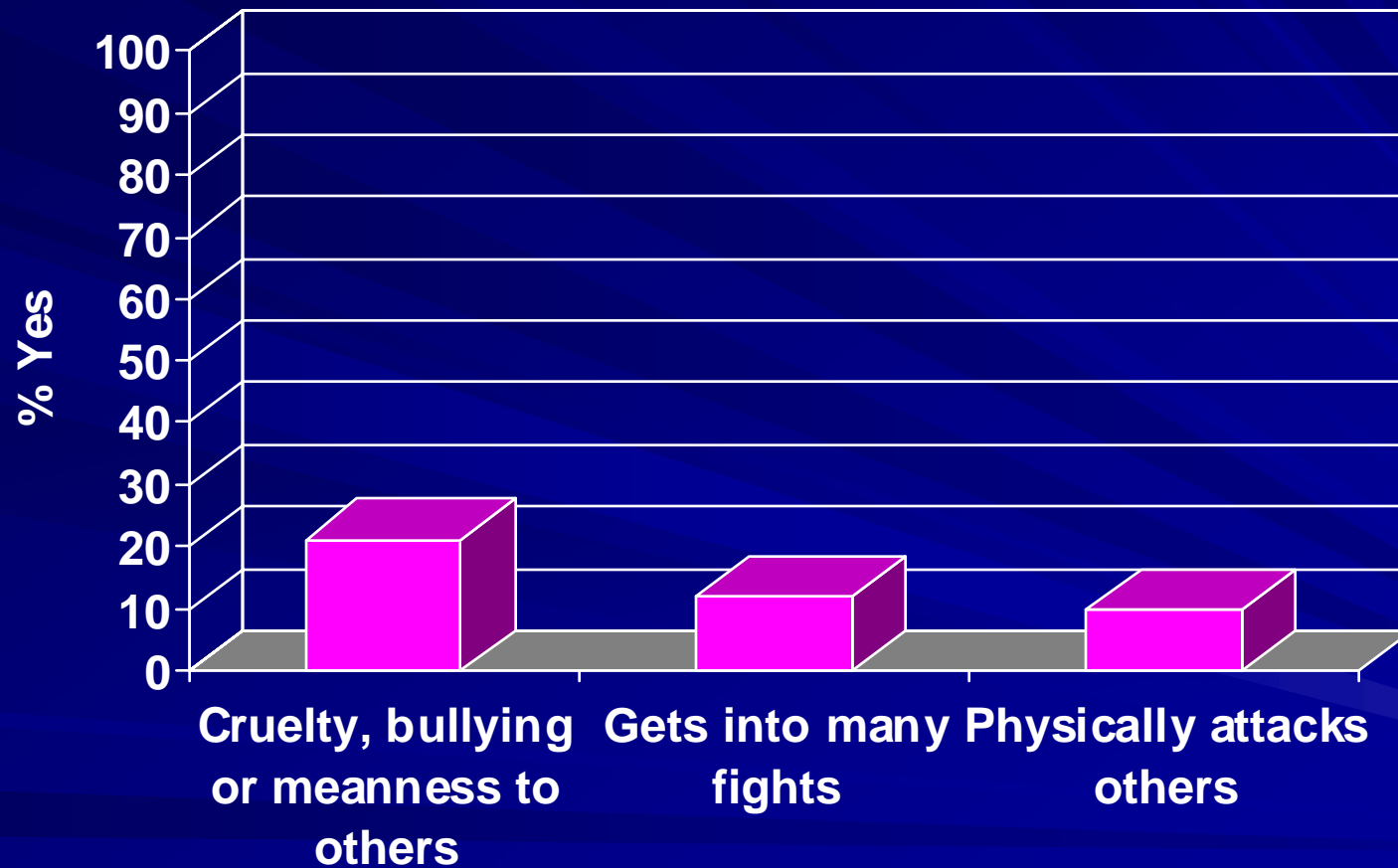
# Physical Aggression: Age 2



# Physical Aggression: Age 2

- 82% (n=394) were engaging in some type of physically aggressive behavior (sum  $\geq 1$ )
- 19% (n=81) classified as highly aggressive (sum  $\geq 4$ )

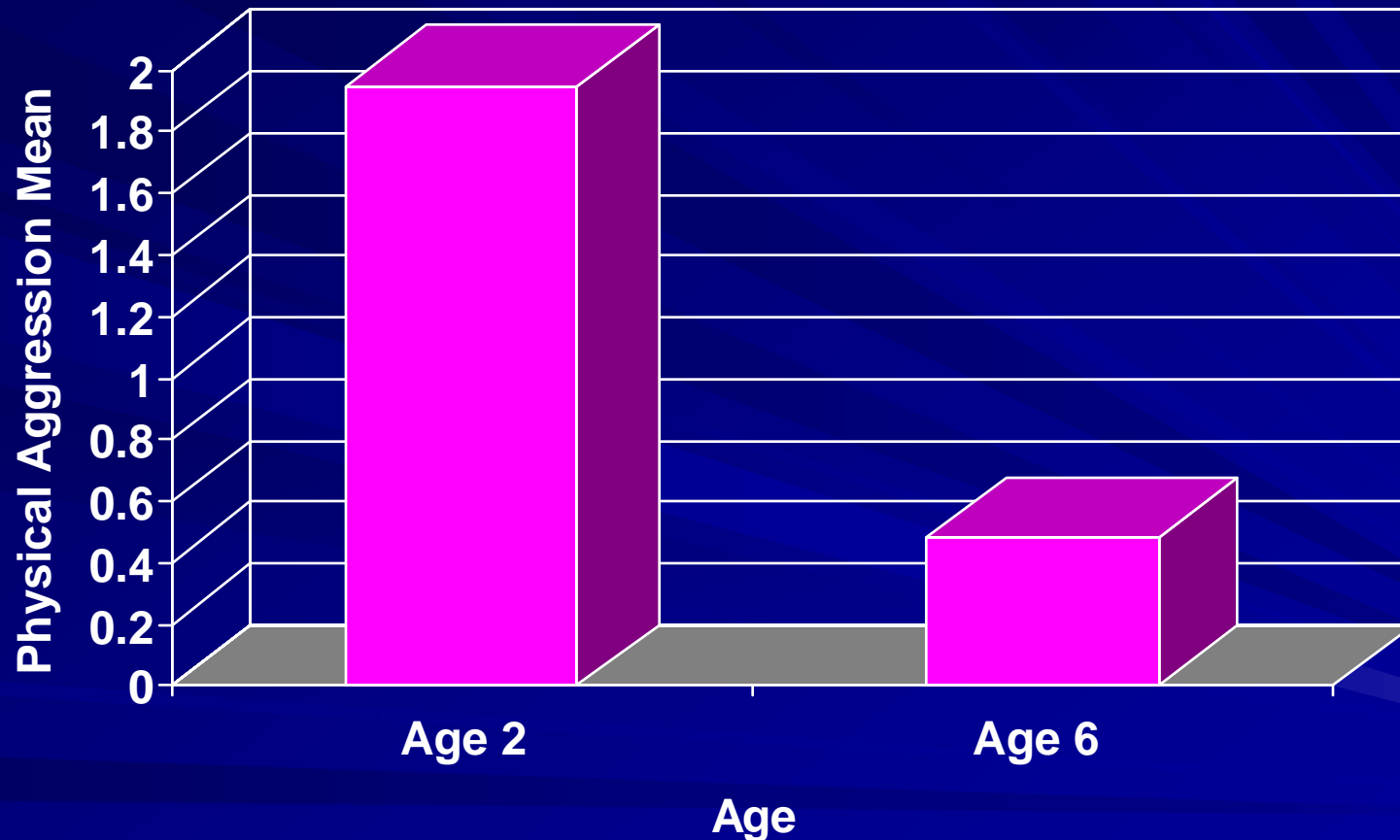
# Physical Aggression: Age 6



# Physical Aggression: Age 6

- 27% (n=118) were engaging in some type of physically aggressive behavior (sum  $\geq 1$ )
- 13% (n=56) classified as highly aggressive (sum  $\geq 2$ )

# Physical Aggression: Age 2 & 6



# High Physical Aggression Group Age 2 & 6

	AGE 6 NO	AGE 6 YES
AGE 2 NO	315	34
AGE 2 YES	59	22



# Gender Differences: Physical Aggression

- No significant gender differences in:
  - Mean physical aggression scores
  - % engaging in any physical aggression
  - % in highly aggressive group

# Physical Aggression & Language

## Age 2

- Negative correlation ( $r = -.20$ )\*\*
- Highly aggressive group had statistically significant lower language scores than the non-highly aggressive group (89.34 vs. 94.92)\*\*

## Age 6

- Negative correlation ( $r = -.13$ )\*\*
- Highly aggressive group had statistically significant lower language scores than the non-highly aggressive group (77.16 vs. 83.29)\*\*

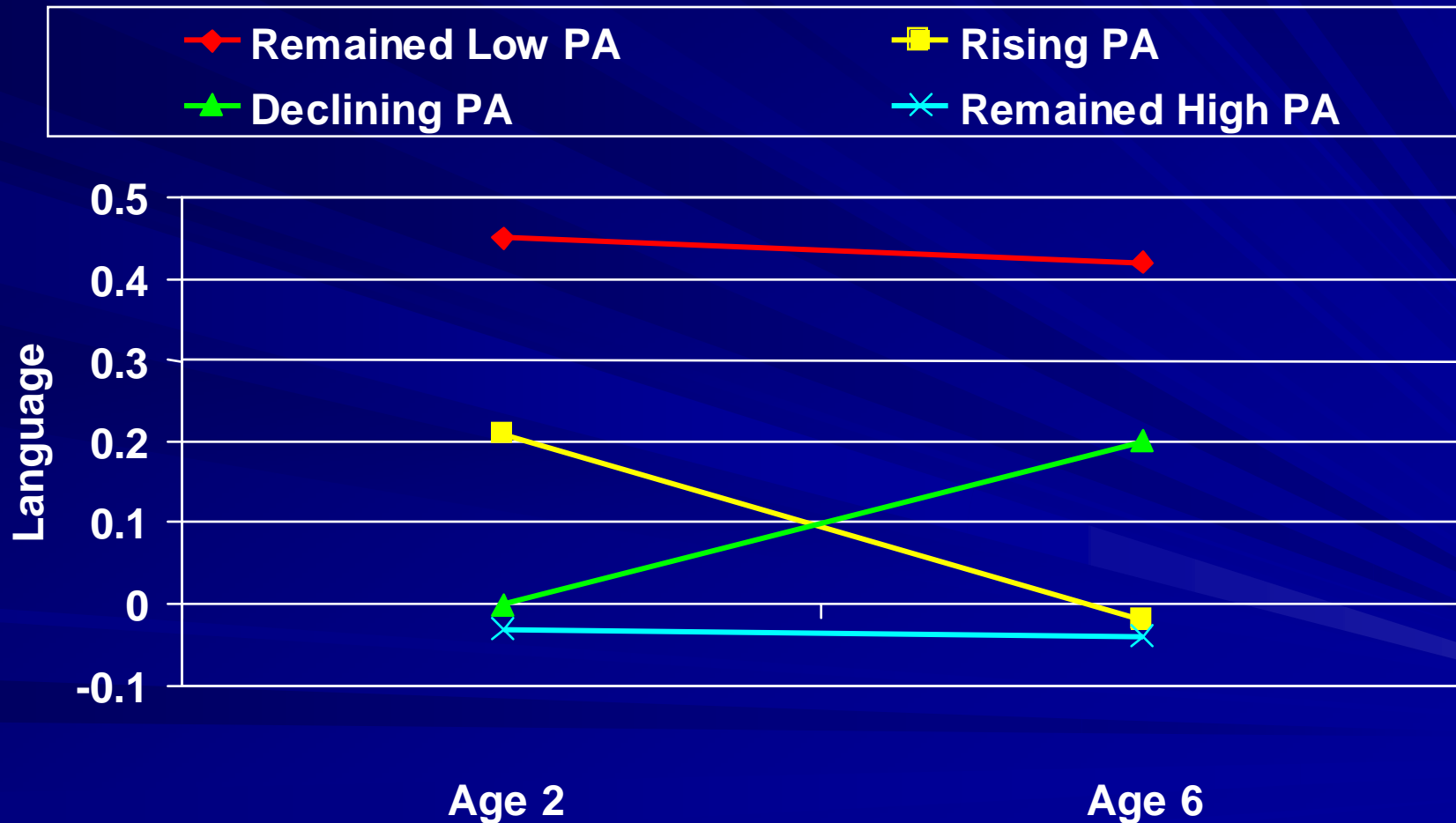
# Gender Differences: Language & Physical Aggression

- Language
  - Girls had statistically significant higher language scores than boys at age 2 (96.21 vs. 91.59)\*\*
- Physical aggression and language age 2:
  - females  $r = -.21$ ,  $p = .003$
  - males  $r = -.18$ ,  $p = .01$
- Physical aggression and language age 6:
  - females  $r = -.07$ ,  $p = .32$
  - males  $r = -.20$ ,  $p = .004$

# High Physical Aggression Group: Age 2 & 6

	AGE 6 NO	AGE 6 YES
AGE 2 NO	315 Low PA	34 Rising PA
AGE 2 YES	59 Declining PA	22 High PA

# Language Scores by Physical Aggression Group



# Conclusions

- Not all children engage in similar rates of aggressive behavior
- Most children learn to control their physically aggression behavior during childhood
- Children who were high on physical aggression at age 2 and 6 had the lowest language ability
- Children with high rates of physical aggression at age 2 who were no longer high on physical aggression at age 6, showed an increase in language

# Conclusions

- Children that change in rates of physical aggression are also those that have changes in language scores
- Language skills may be one mechanism that helps facilitate the reduction of physical aggression behavior

# Limitations

- Use of MDI for measure of language at age 2
- Mothers reports of physical aggression
- Direction of effects not addressed



# Implications

- Males and females may have different mechanisms operating in reducing their physically aggressive behavior
- These findings may assist in identifying those individuals most likely to continue their high rates of aggressive behavior in adolescents
- Interventions in early childhood that focus to increase language ability may help reduce the number of violent adolescents and adults