

Using a Multilevel Approach to Examine the Association between Childhood Social Behavior and Adult Criminality

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Introduction

- **The construct of aggression encompasses a broad mix of behaviors:**
 - Physical aggression
 - Verbal aggression
 - Impulsivity
 - Disruptiveness
 - Disobedience

- **Different types of violence:**
 - Rape, robbery, homicide

Introduction

▣ Childhood aggression:

- ▣ One of the best predictors of adolescent & adult criminality, including violent offending
- ▣ Boys found to be more generally more aggressive than girls, however...
- ▣ Early aggression as antecedent to adult crime still evident for females
- ▣ Females engage in crime but to a lesser extent



(Huesmann et al., 1994; Farrington, 1994)

Introduction

▣ Life-course-persistent offenders:

- ▣ Childhood onset
- ▣ Minor & serious delinquency during adolescence
- ▣ Persist to commit violent adult crimes

**comprise 6% of male population; account for > 50% of all violent offenses

▣ Adolescence-limited offenders:

- ▣ Adolescence onset only
- ▣ Transient, less severe, stops before adulthood

Introduction

▣ Moderating variables:

- ▣ Neighborhood characteristics
- ▣ Early social interactions with peers

Poverty; low SES

Poor Peer Relations

Have been linked to childhood aggressive & adult antisocial & criminal acts

- ▣ Some aggressive youth may be well-liked, viewed as socially attractive
- ▣ Highly likeable peers exhibit lower level of adjustment difficulties over course of development

The Present Study

■ The purpose:

- To examine the extent to which children's functioning with peers will predict adult criminal behavior



- Whether socio-ecological disadvantage moderates the relation between childhood aggression & adult criminality

Hypotheses

▣ Hypothesis 1:

- ▣ Childhood aggression scores, especially harmful aggression, will be *positively* related to adult criminal offending
- ▣ Specifically, it is expected that *harmful aggression* will be more strongly associated with outcome than disobedience



Hypotheses

▣ Hypothesis 2:

- ▣ Childhood measures of *likeability*, specifically a measure of altruism & competent/positive functioning with peers will be negatively associated with measures of adult criminal behavior

Hypotheses

▣ Hypothesis 3:

- ▣ Measures of *likeability* will moderate the relation between childhood aggression & adult criminality
- ▣ Specifically, the association between childhood aggression will be *weaker* among those with high scores of likeability

Hypotheses

▣ Hypothesis 4:

- ▣ Neighborhood conditions will moderate the relation between childhood aggression & adult criminality
- ▣ Specifically, this relation will be *stronger* for those from poorest neighborhoods & *weaker* for those in better-off neighborhoods

Method

▣ Community sample

- ▣ Concordia Longitudinal Risk Project (CLRP)
- ▣ Two large community-based sets of variables
 - ▣ Childhood measures
 - ▣ Criminal behavior

▣ Multi-level approach

- ▣ Hierarchical Linear Modeling (HLM)
- ▣ Accommodates nested structure of data
- ▣ Facilitates inclusion of variables derived from students, classrooms, neighborhoods

Method

▣ Participants:

- ▣ Current sample $N = 2,486$
 - 4th grade (616 boys & 673 girls)
 - 7th grade (606 boys & 592 girls)

} 182 classes
- ▣ Children drawn from mixed-sex classrooms in schools located in working class neighborhoods in Montreal, Qc.

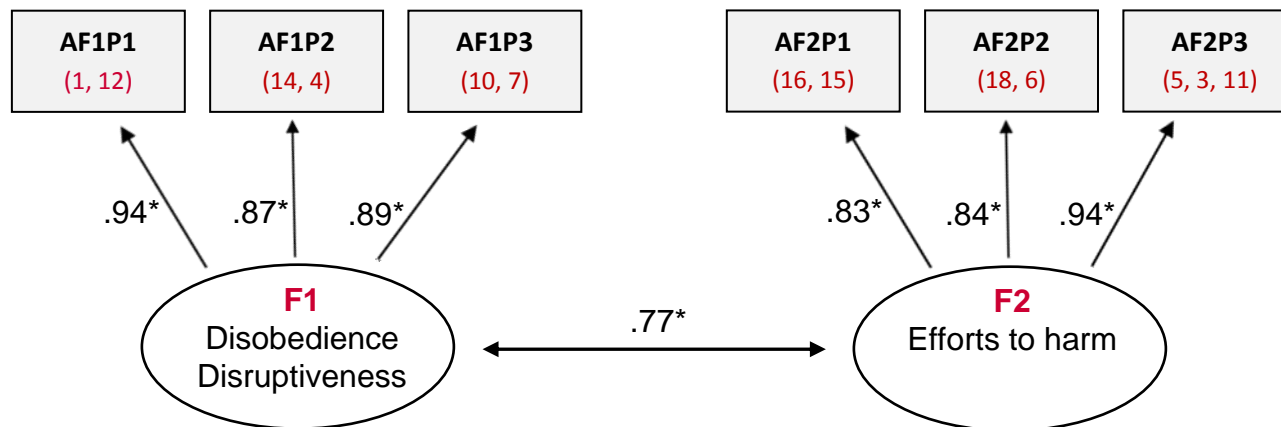
▣ Procedure:

- ▣ Pupil Evaluation Inventory (PEI)
- ▣ Asked to nominate up to 4 classmates on measures of Aggression & Likeability

Method

Confirmatory Factor Analysis (CFA):

- Used in order to establish the underlying factor structure of Aggression subscale



Examples:

Those who don't pay attention to the teacher
Those who bother people when they're trying to work
Those who always mess around and get into trouble

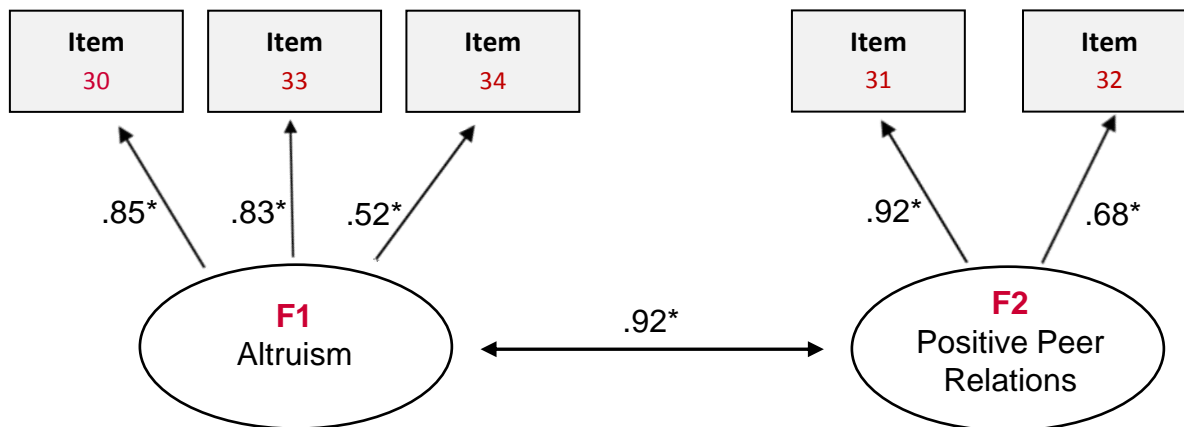
Examples:

Those who give dirty looks
Those who are mean and cruel to others
Those who say they can beat everybody up
Those who start a fight over nothing

Method

Confirmatory Factor Analysis (CFA):

- Used in order to establish the underlying factor structure of Likeability subscale



Examples:

Those who help others
Those who are especially nice
Those who always seem to understand things

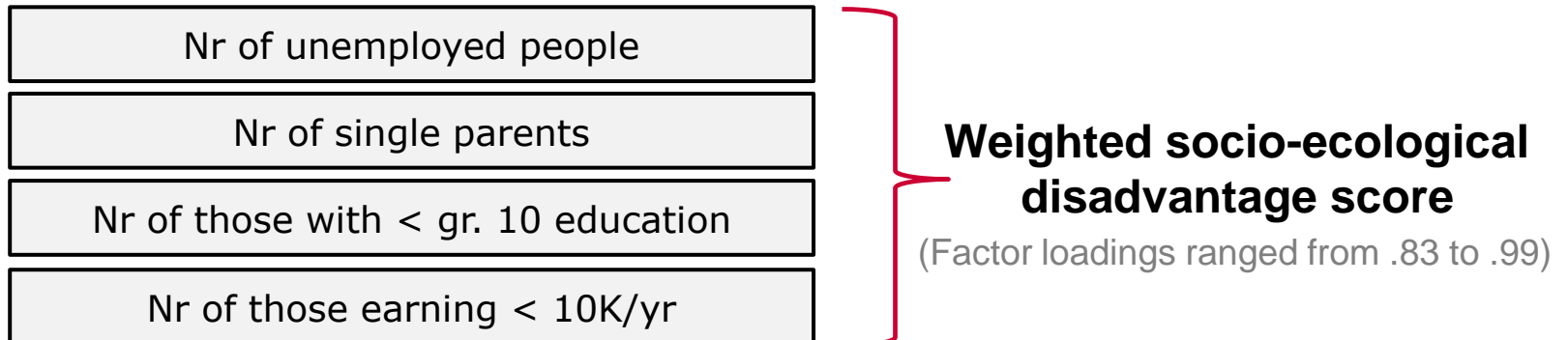
Examples:

Those who are liked by everyone
Those who are your best friends

Method

❑ Socioecological neighborhood disadvantage:

- ❑ 1986 Block-enumerated census tract as approximation of 1976 conditions
- ❑ Based on Exploratory Factor Analysis, weighted disadvantage factor used in the analysis



Method

▣ Criminal Data:

- ▣ Adult criminality information obtained via open access Ministry of Justice database of arrests & convictions

Convictions for Property offenses 20+

Burglary, theft of car, theft from person, vandalism, larceny, property damage
($n = 253$); 10.2 % of sample; ($M = .31$, $SD = 1.42$)

Convictions for Violent offenses 20+

Aggravated & simple assault, gang fighting, sex offenses, kidnapping,
($n = 111$); 4.4 % of sample; ($M = .12$, $SD = .78$)

Results

- ▣ **Total of four two-level models**
 - ▣ Initial analysis with three-level model
 - ▣ No neighborhood effects
 - ▣ Separate analyses for two forms of likeability

Results: Property Crimes 20+

▣ Predictors at the Intercept:

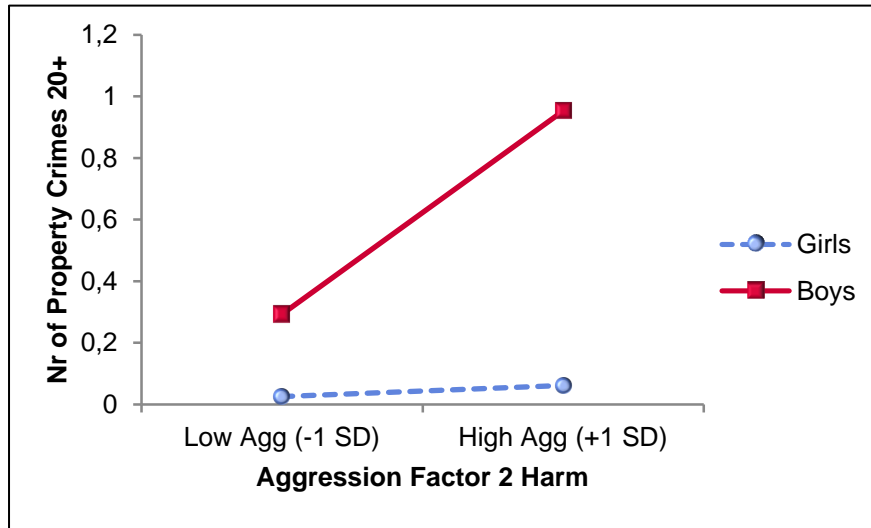
- ▣ Significant & random intercept
- ▣ One L2 predictor (sex) accounted for the between-group variation in the intercept
- ▣ Overall value higher for boys
- ▣ Difference between boys & girls approximately 40% of a standard deviation.



Results: Property Crimes 20+

Model 1

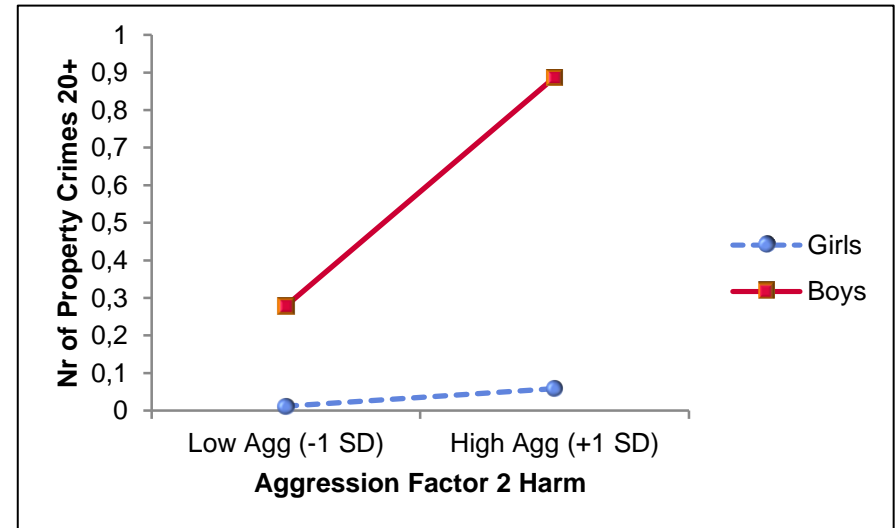
Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)



Significant & Random Effect ($\beta = .12$, $SE = .05$, $t = 2.50$, $p = .01$)
Sex ($\beta = -.10$, $SE = .02$, $t = -3.87$, $p = .00$)

Model 2

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



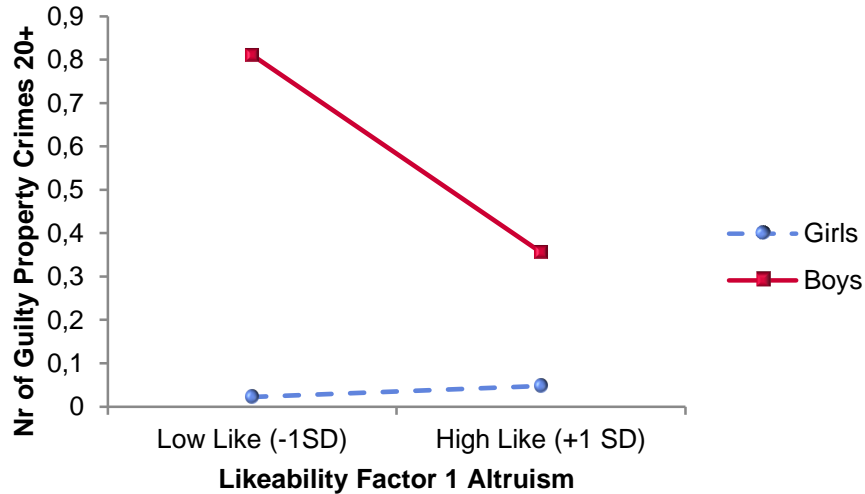
Significant & Random Effect ($\beta = .13$, $SE = .04$, $t = 2.87$, $p = .00$)
Sex ($\beta = -.12$, $SE = .02$, $t = -4.13$, $p = .00$)

Slopes showing the association between childhood index of harmful aggression and convictions for property crimes for boys and girls.

Results: Property Crimes 20+

Model 1

Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)

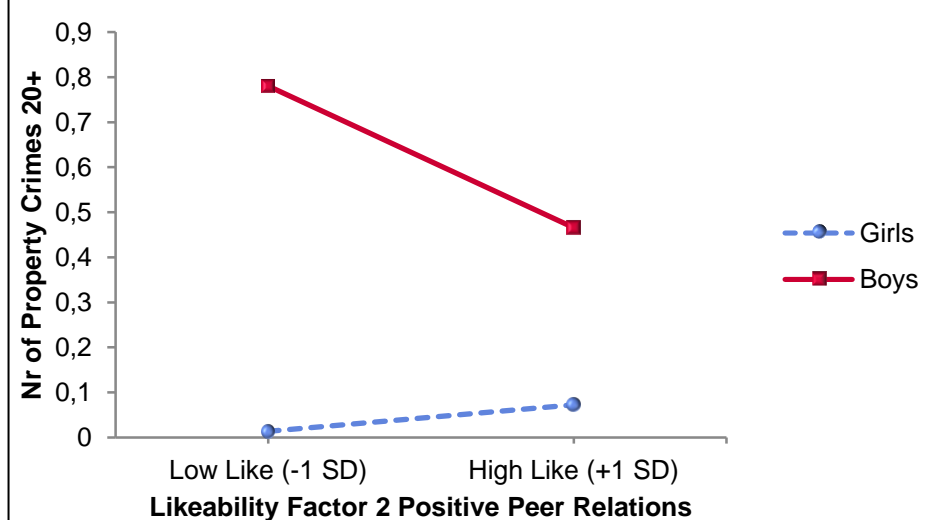


Significant & Random Effect ($\beta = -.06$, $SE = .02$, $t = -2.48$, $p = .01$)
Sex ($\beta = .06$, $SE = .02$, $t = 2.89$, $p = .00$)

Slopes showing the association between childhood index of altruism and convictions for property crimes for boys and girls.

Model 2

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



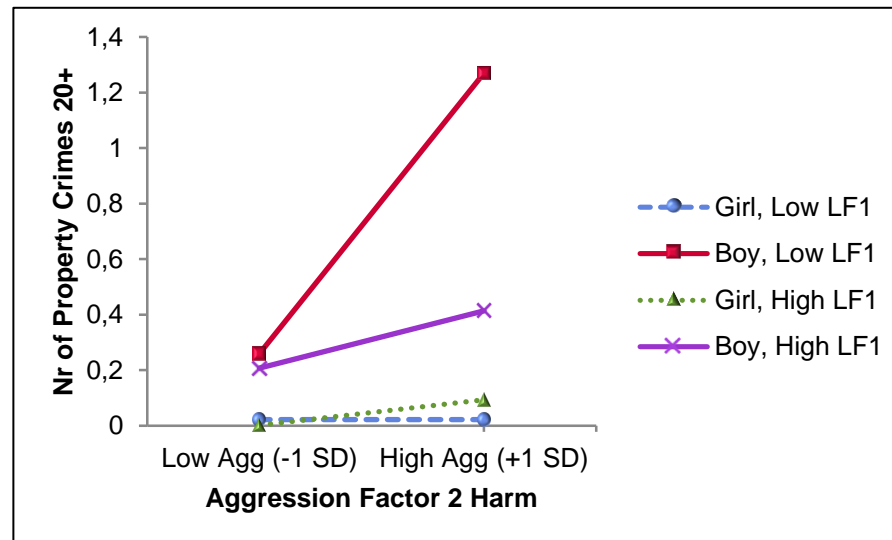
Significant & Random Effect ($\beta = -.03$, $SE = .01$, $t = -2.35$, $p = .02$)
Sex ($\beta = -.03$, $SE = .01$, $t = -2.35$, $p = .02$)

Slopes showing the association between childhood index of positive peer relations and convictions for property crimes for boys and girls.

Results: Property Crimes 20+

Model 1

Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)



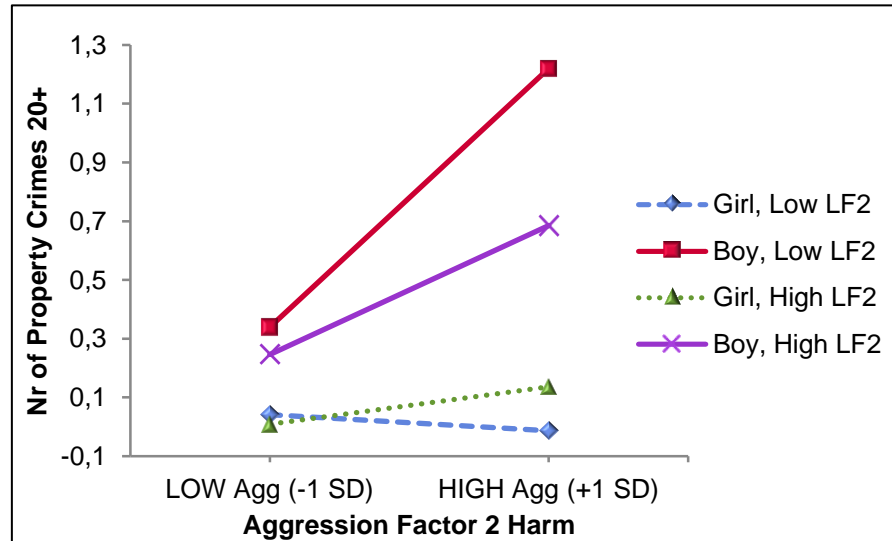
Significant & Random Interaction ($\beta = -.03$, $SE = .02$, $t = -1.73$, $p = .08$)
Sex ($\beta = .04$, $SE = .02$, $t = 2.18$, $p = .03$)

Property crimes as a function of gender and harmful aggression by altruism interaction

Results: Property Crimes 20+

Model 2

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



Non-Significant & Random Interaction ($\beta = -.01$, $SE = .02$, $t = -.53$, $p = .59$)

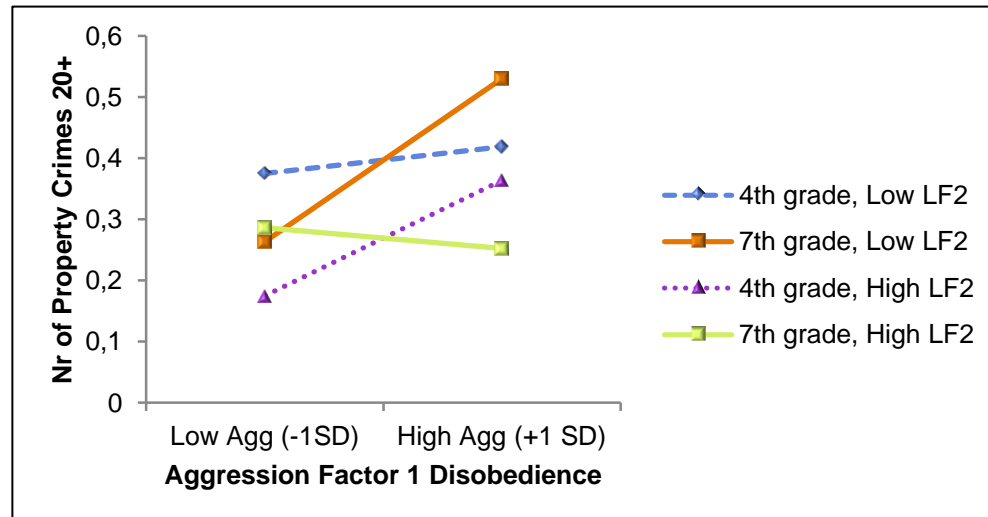
Sex ($\beta = .03$, $SE = .01$, $t = 2.18$, $p = .03$)

Property crimes as a function of gender and harmful aggression by positive peer relations interaction

Results: Property Crimes 20+

Model 2

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



Non Significant & Random Interaction ($\beta = -.00$, $SE = .01$, $t = -.38$, $p = .69$)
Grade ($\beta = -.01$, $SE = .00$, $t = -2.07$, $p = .03$)

Property crimes as a function of grade and disobedience by positive peer relations
interaction

Small effects, interpret with caution

Results: Violent Crimes 20+

▣ Predictors at the Intercept:

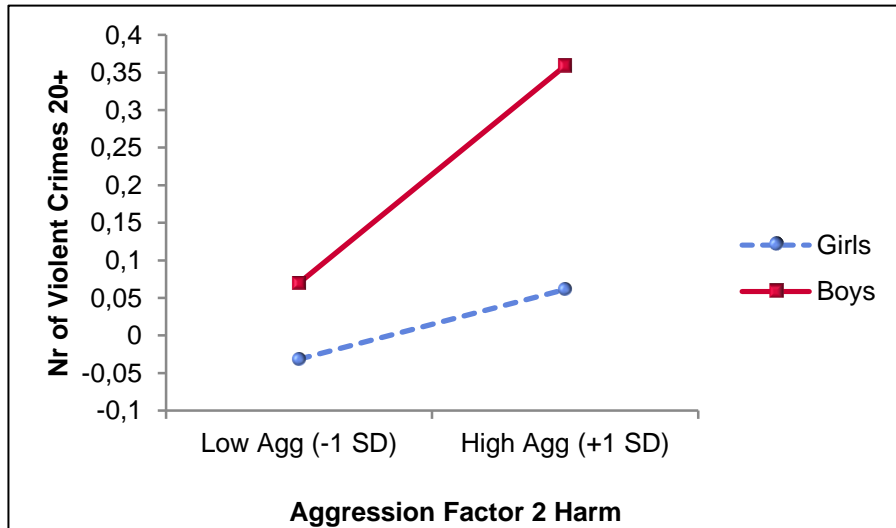
- ▣ Significant & random intercept
- ▣ Two L2 predictors (sex & grade) accounted for the between-group variation in the intercept
- ▣ Overall value higher for boys
- ▣ Difference between boys & girls approximately 25% of a standard deviation.



Results: Violent Crimes 20+

Model 3

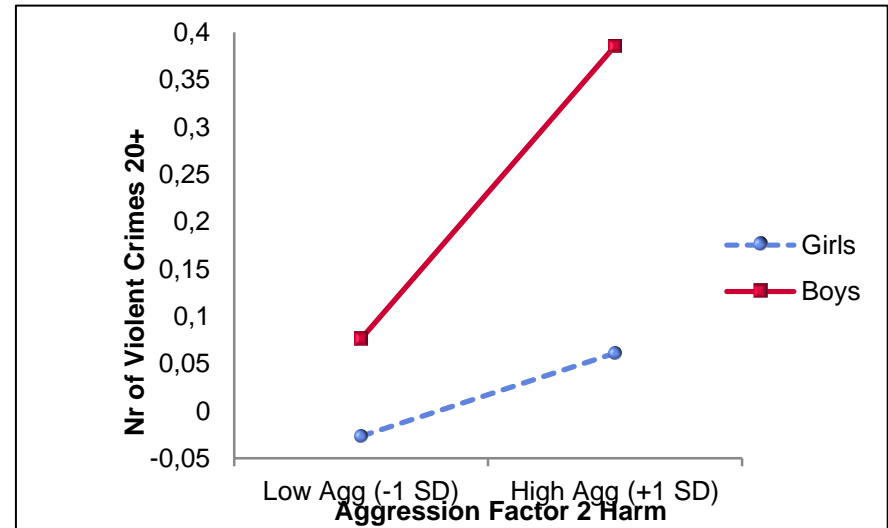
Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)



Significant & Random Effect ($\beta = .07$, $SE = .02$, $t = 2.47$, $p = .01$)
Sex ($\beta = -.03$, $SE = .01$, $t = -2.51$, $p = .01$)

Model 4

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



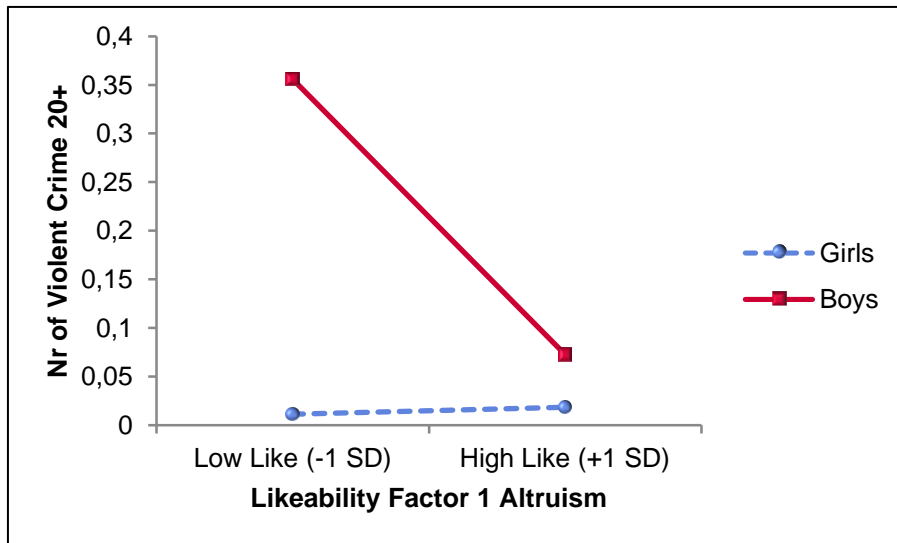
Significant & Random Effect ($\beta = .07$, $SE = .02$, $t = 2.79$, $p = .00$)
Sex ($\beta = -.04$, $SE = .01$, $t = -2.69$, $p = .00$)

Slopes showing the association between childhood index of harmful aggression and convictions for property crimes for boys and girls.

Results: Violent Crimes 20+

Model 3

Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)

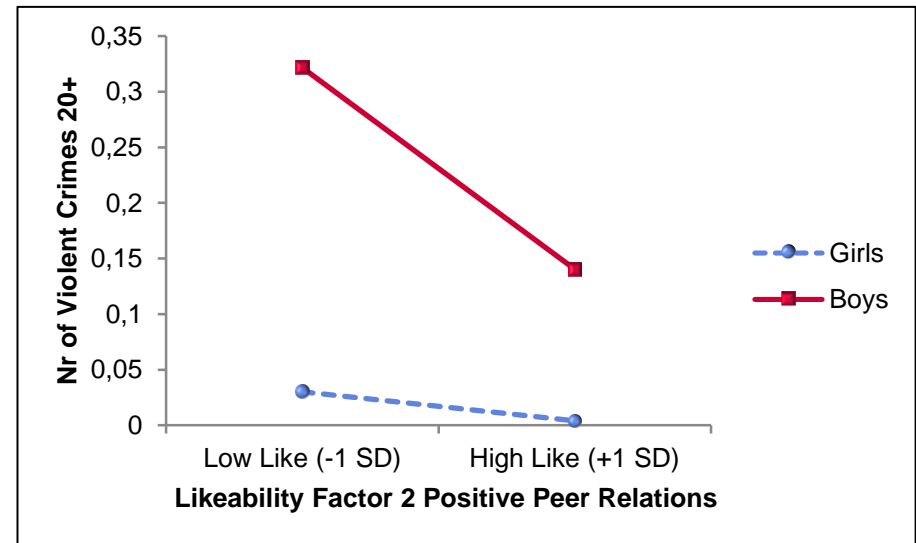


Significant & Random Effect ($\beta = -.03$, $SE = .01$, $t = -2.68$, $p = .00$)
Sex ($\beta = .04$, $SE = .01$, $t = 3.00$, $p = .00$)

Slopes showing the association between childhood index of altruism and convictions for violent crimes for boys and girls.

Model 4

Disobedience (AF1); Harmful Aggression (AF2)
Positive Peer Relations (LF2)



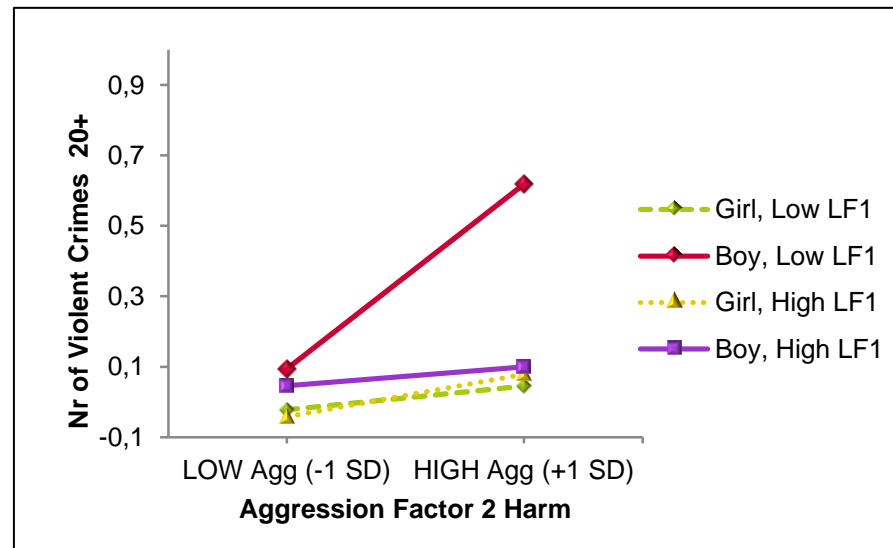
Significant & Random Effect ($\beta = -.02$, $SE = .00$, $t = -3.59$, $p = .00$)
Sex ($\beta = -.02$, $SE = .00$, $t = 4.26$, $p = .00$)

Slopes showing the association between childhood index of positive peer relations and convictions for violent crimes for boys and girls.

Results: Violent Crimes 20+

Model 3

Disobedience (AF1); Harmful Aggression (AF2)
Altruism (LF1)



Significant (Marginal) & Random Interaction ($\beta = -.02$, $SE = .01$, $t = -1.55$, $p = .06$)
Sex ($\beta = .02$, $SE = .01$, $t = 1.98$, $p = .04$)

Violent crimes as a function of gender and harmful aggression by altruism interaction

Results

▣ Meng's test for dependent correlations:

- ▣ Both Agg F1 & Agg 2 more strongly related to adult property ($r = .12$; $r = .14$) than violent crimes ($r = .09$; $r = .11$)

▣ HLM:

- ▣ Agg F2 better predictor of adult property crimes (10.7%) than disobedience (8.7%)
- ▣ Agg F2 better predictor of adult violent crimes (9.9%) than disobedience (6.5%)

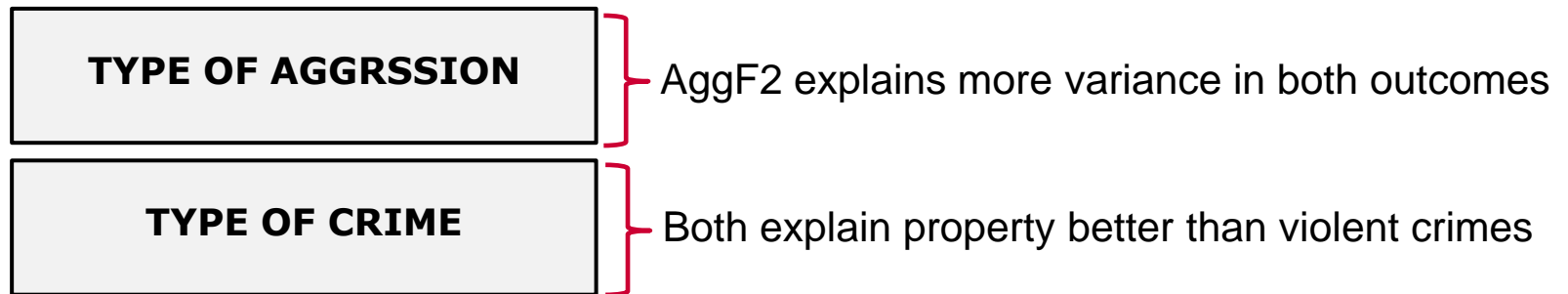
▣ Neighborhood disadvantage & adult criminality:

- ▣ No effects observed

Discussion

▣ Hypothesis 1:

- ▣ Harmful aggression (AggF2) found to be positively related to adult criminal offending (Supported)



- ▣ Effects uniformly stronger for boys than for girls

Discussion

▣ Sex Differences & General Strain Theory (GST)

- ▣ Inability to achieve a goal
 - ▣ Removal of '+' stimulus
 - ▣ Presentation of '-' stimulus
- Lead to negative emotional states
(anger, frustration, rage, depression)

▣ Males display higher rates of offending

- ▣ Different emotional responses to strain (anger vs. depression)
- ▣ Gender socialization promotes use of different responses
- ▣ Females have higher levels of emotional support
- ▣ Lower levels of social control among males (e.g. later curfews)

Discussion

- **Hypothesis 2:** (Supported)
 - Both measures of likeability found to be negatively related to adult criminal behavior
 - Effect particularly strong for boys
 - In line with existing links between highly likeable children and low levels of maladjustment
 - Aggressive children with low peer status at higher risk for future aggression, externalizing behaviors.

Discussion

- **Hypothesis 3:** (Supported)
 - Measures of altruism found to moderate the relation between childhood aggression and adult outcomes
 - Boys high on Agg F2 and low on altruism at greater risk for committing adult crimes compared to those high on Agg F2 but who were also rated as altruistic
 - Positive peer relations found to moderate the relation between Agg F2 and property crimes, esp. for boys
 - Girls rated as high on Agg F2 and high on liking found to commit more crimes compared to girls high on Agg F2 and low on liking (Small effect, interpret with caution)

Discussion

■ Resource Control Theory (RCT)

- Children can successfully utilize aggressive *and* prosocial strategies to control resources in environment
 - Prosocial skills help diminish negative effect of aggressive behavior
 - Affiliation
 - Cooperation
 - Helping
 - Reciprocity
- May serve as successful resource acquisition;
May help youth create alliances with long-term benefits



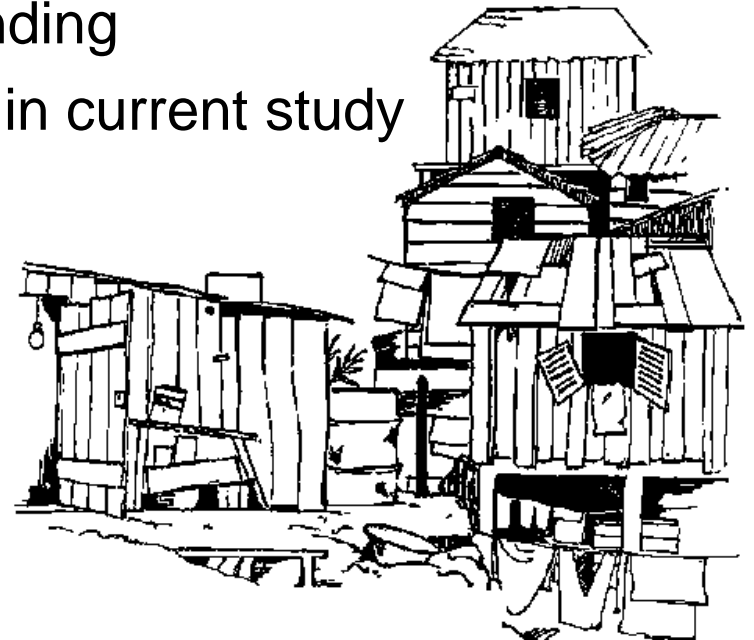
Discussion

❑ Finding not consistent with RCT

- ❑ Girls rated as highly aggressive and highly likeable were found to commit more property crimes
- ❑ May be explained by affiliation with deviant peers, early pubertal development, but speculative
- ❑ Associating with deviant peers
- ❑ May preclude some from acquiring social skills for adaptive outcomes

Discussion

- ▣ **Socioecological Disadvantage** (Not Supported)
 - ▣ No effects observed
 - ▣ Not consistent with existing literature
 - ▣ Adverse neighborhood conditions often linked to higher rate of criminal offending
 - ▣ Restricted range of variability in current study
 - ▣ No middle class comparison



Limitations

▣ Neighborhood Effects

- ▣ Future attempts should include more appropriate comparison groups from more variable, diverse socio-ecological conditions

▣ Attention to Developmental Pathways

- ▣ Several waves of data collection
- ▣ Attention to developmental trajectories
- ▣ Better understanding of onset, maintenance, and possibly desistance from aggressive behaviors over time

Conclusion

■ Current Investigation

- ❑ Allows for insight into how childhood aggression comes to be associated with adult criminality
- ❑ The importance of youth's social milieu & interactions in thwarting deleterious effects of aggression on future outcomes
- ❑ Important implications for intervention programs
(Social competency, pro-social skills training, etc.)
- ❑ Minimizing the negative just as important as maximizing the positive...

Thank You

Dr. Bukowski, The BB Lab, Dr. Schwartzman,
Dr. Serbin, Dr. Ledingham, Claude Senneville,
CRDH, SSHRC, FRQSC,

