Delinquent peer group affiliation in adolescence: The impact of moving in and out of poor neighborhoods

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General objective

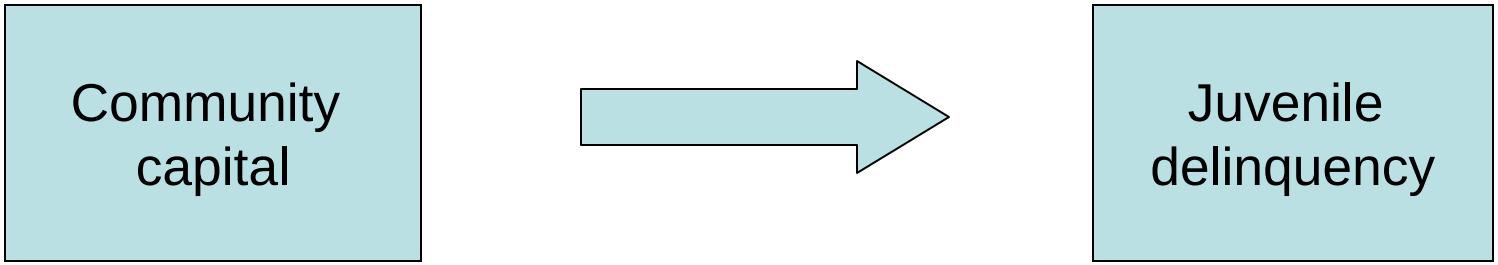
- To test if entry and exit from poor neighborhoods deflect adolescent's trajectory of delinquent peer group affiliation

- To test if this effect depends upon the individual's developmental history of that behavior

… while controlling for confounding individual and familial circumstances

Introduction

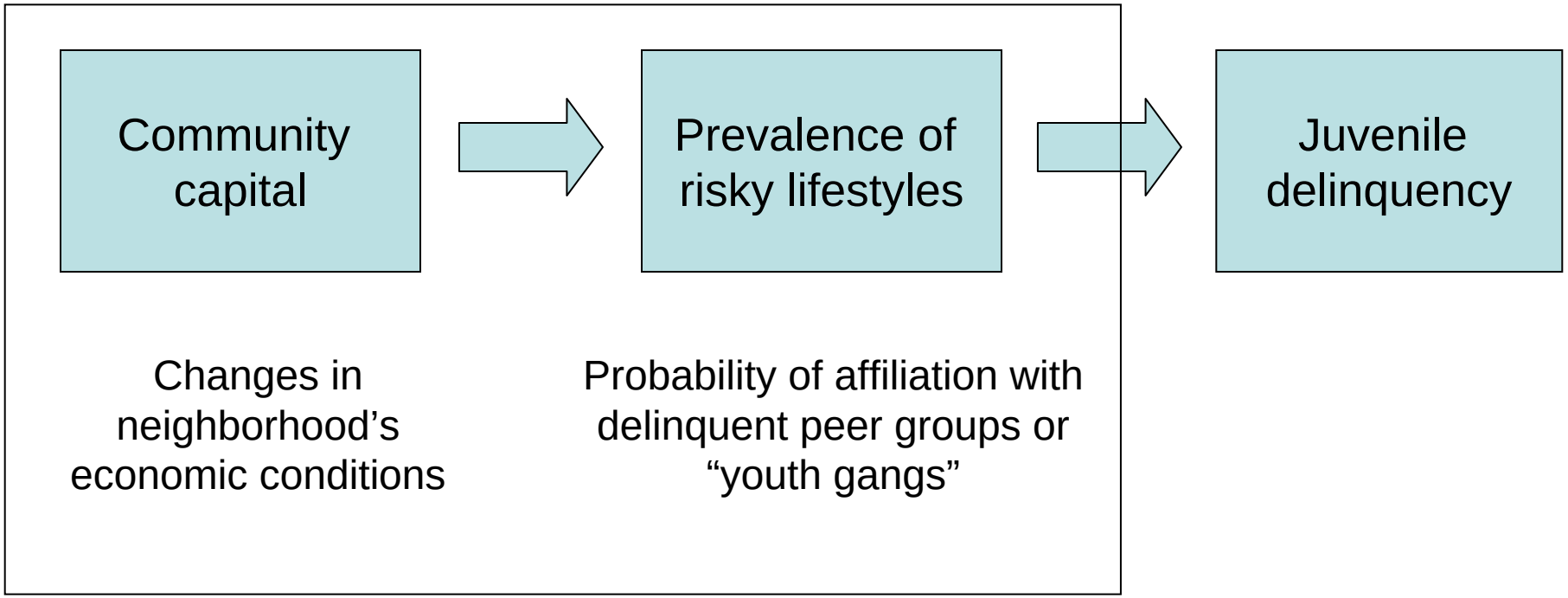
Neighborhood poverty & juvenile delinquency



- Serious delinquency & juvenile crime are concentrated in poor areas.
- Correlational studies suggest that residing in a poor neighborhood has an adverse effect on behavior problems and delinquency, both in US and Canada.
- US experimental studies show that moving out of extremely poor neighborhoods is associated to substantially lower rates of violent criminal behavior and to a reduction in behavior problem.
- (e.g., Ingoldsby & Shaw, 2002; Katz et al 2003; Kohen, Brooks-Gunn, Leventhal, & Hertzman, 2002; Leventhal & Brooks-Gunn, 2000; Stouthamer-Loeber et al 2002)

Why?

Social mechanisms of community influences on crime and pathways in criminality (Wikström & Sampson 2003)



In Lahey, Moffit & Caspi (Eds.), *Causes of Conduct Disorder and Juvenile Delinquency.*

Delinquent peer groups or youth gangs…

- Facilitate delinquent behaviors (Canada & US)
- Gang members “are responsible for the lion’s share of serious & violent delinquency” (Canada & US)
- Gang membership during adolescence generates disorder across the life course in multiple domains
- Evidence suggests that gang membership is increasing (Canada, US & UK)

(e.g.: Correctional Service of Canada 2004; Gatti et al. 2005; Lacourse, et al 2003; Statistics Canada, 1999; Thornberry et al 2003)

Neighborhood poverty & delinquent peer groups …

- A growing body of evidence from correlational studies show direct or indirect effects of neighborhood disadvantage on deviant peer affiliations

  - Ex:

    Ge, Brody, Conger, Simons, & Murry, 2002

    Lahey, Gordon, Loeber, Stouthamer-Loeber, & Farrington, 1999

    Pettit, Bates, Dodge, & Meece, 1999

    Thornberry et al., 2003

Limits of previous studies linking neighborhood poverty & delinquent peer group affiliation …

- Cross-sectional, non-developmental
- Measured neighborhood factors at only one time point
- No exploration of cross-level interactions between individuals and contexts
- The few experimental studies (US inner cities):
  - Do not specifically address how neighborhood change affect delinquent peer group affiliation.
  - Rather, they assess how *moving out* of *extremely poor* areas (rates of poverty not infrequently over 80%) influence levels of crime and delinquency.

(Duncan & Raudenbush, 2001; Ingoldsby & Shaw, 2002; Wikström & Sampson, 2003)

The present study…

- Follows a national sample of adolescent from a variety of social milieu throughout adolescence
- Estimates the effects associated with *moving in and out* of poor neighborhood contexts on developmental trajectories of delinquent peer group affiliation
- Integrates neighborhood effects in a developmental analytic framework.
- Examines how developmental history may affect the response to neighborhood change

(Ingoldsby & Shaw, 2002; Leventhal & Brooks-Gunn, 2000; Wikström & Sampson, 2003)

Hypotheses

General

- Moving in ➔ Increase in del. peer group affiliation
- Moving out ➔ Reduction in del. peer group affiliation

Specific

- Neighborhood influences will depend on the individual's previous developmental history

- However, it is not clear for whom to expect the strongest influence…

  ➔ Greatest on those with weakest propensity?

  ➔ Greatest on those with highest propensity?

(Horney, Osgood, & Marshall 1995; Pettit et al 1999; Wikström & Sampson, 2003)

Method

Sample

- NLSCY longitudinal sample (N = 4725)
  - 10 yrs and over
  - Valid weight at cycle 5 (71%)
  - At least one valid measure of the DV and valid measures on all risk factors (65% or 4725/7269)

	Age				
	Cycle 1 1994-95	Cycle 2 1996-97	Cycle 3 1998-99	Cycle 4 2000-01	Cycle 5 2002-03
Cohort 1	10-11	12-13	14-15	16-17	18-19
Cohort 2	8-9	10-11	12-13	14-15	16-17
Cohort 3	6-7	8-9	10-11	12-13	14-15

* All analyses control for cohorts effects

** All analyses use cycle 5 longitudinal weights divided by average weight

Measures: Dependant Variable

1 self-report Yes/No item:

In the past 12 months…

- were you part of a group that did bad things? (10-11 yrs)
- were you part of a gang that broke the law by stealing, hurting someone, damaging property, etc.? (12-19 yrs)

- Pattern of prevalence

Parallel those found in previous studies using a similar single item:

- Higher in early adolescence (before 14 yrs) 6,3% 7,1%
- Steady decline thereafter : 5,1% 3,9% 2,3%

(Lacourse et al. 2003; Hill et al, 1999; Thornberry, et al 2003)

Measures: Neighborhood poverty

- Dissemination area (DA), 2001 Canadian Census
  - Population range of 400-700 individuals, covers the whole country
  - Similar geographic unit used in previous NLSCY neighborhood studies
  - Represent an improvement (e.g.: uniformity, intuitive boundaries)

- 20%+ poor residents = poor DA
  - Based on Statistics Canada's Low Income Cut-off
  - 20% poverty threshold used in previous NLSCY neighborhood effects studies (about 25% of geographic areas – tracts or DAs- are under the 20% threshold)
  - US Census Bureau poverty area threshold (vs 40% = extremely poor areas)

(Fong & Shibuya 2003; Kohen et al 2002; Puderer, 2001; Quillian, 2003)

Measures: Time-varying controls

- Events that are associated with entry, re-entry or exit …
  - –Entry: Divorce/becoming a single parent , important income reduction
  - –Exit: Remarriage or becoming attached, sharp income increase
  - –Both: Mobility

  … are incorporated as control variables.

Variables	Measure		Descriptive
Neighborhood transitions	-Exit of poor DA		8,0%
	-Entry in poor DA		7,2%
	-Moves in other DA, regardless of pov. status		37,5%
Income change	- 5 Categories, take into account the number of persons in household	↑	50%
		↓	20%
Change of family status	-Became single		11,6%
	-Became non-single		5,1%

(Finnie, 2000; South & Crowder, 1997).

Measures: Time-stable controls

- Controls for initial (10 yrs old) familial and individual characteristics that may affect both the individual's trajectory and the likelihood of experiencing the transition are incorporated.

Variables	Measure	Descriptive
SES	Parental education, occupation & household Income	Range: -3,5 to 2,8 Mean: 0 (SD=0,7)
Number of moves	Number of times the family moved in the last 10 years	Range: 0 to15 Mean: 1,4 (SD=2,0)
Intact family	Married/common-law couple, all children are the natural or adopted offspring of both members of the couple	73,9%
Hyperactivity	8 Likert items, α .84	Range: 0 to 16 Mean: 4,2 (SD=3,6)
Sex	Being a boy	$\approx$ 50%

Analyses

Developmental trajectory analysis

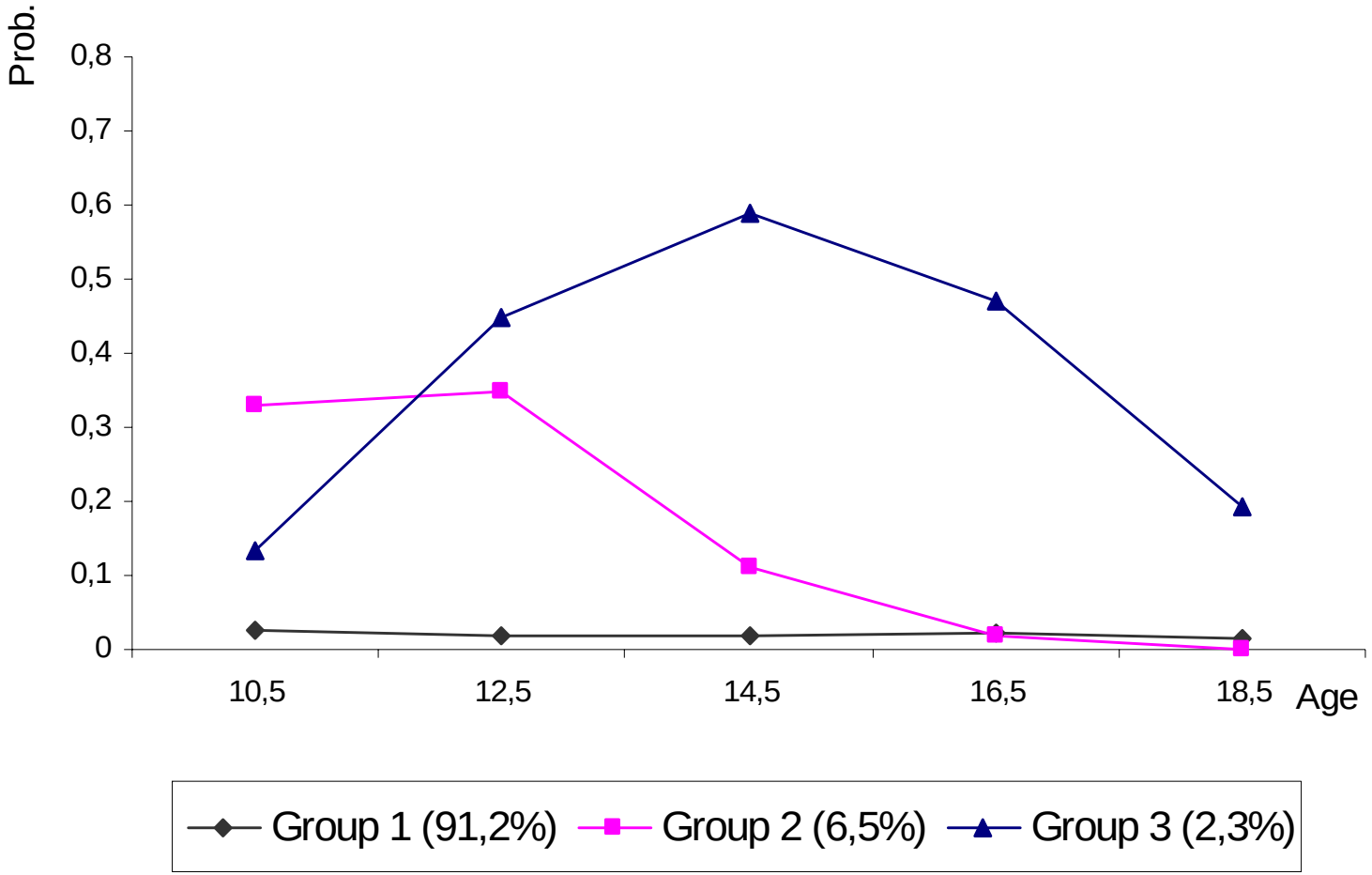
Semi-parametric, group-based approach

- Identify groups of individuals following similar patterns of evolution over time
- Allows for estimation of the impact of a turning point, like moving into or out of a poor neighborhood, on each trajectory group
- Allows to identify interactions between developmental history and turning point's impact.

(Nagin, 1999, 2003, in press)

Results

Developmental trajectories of delinquent group membership

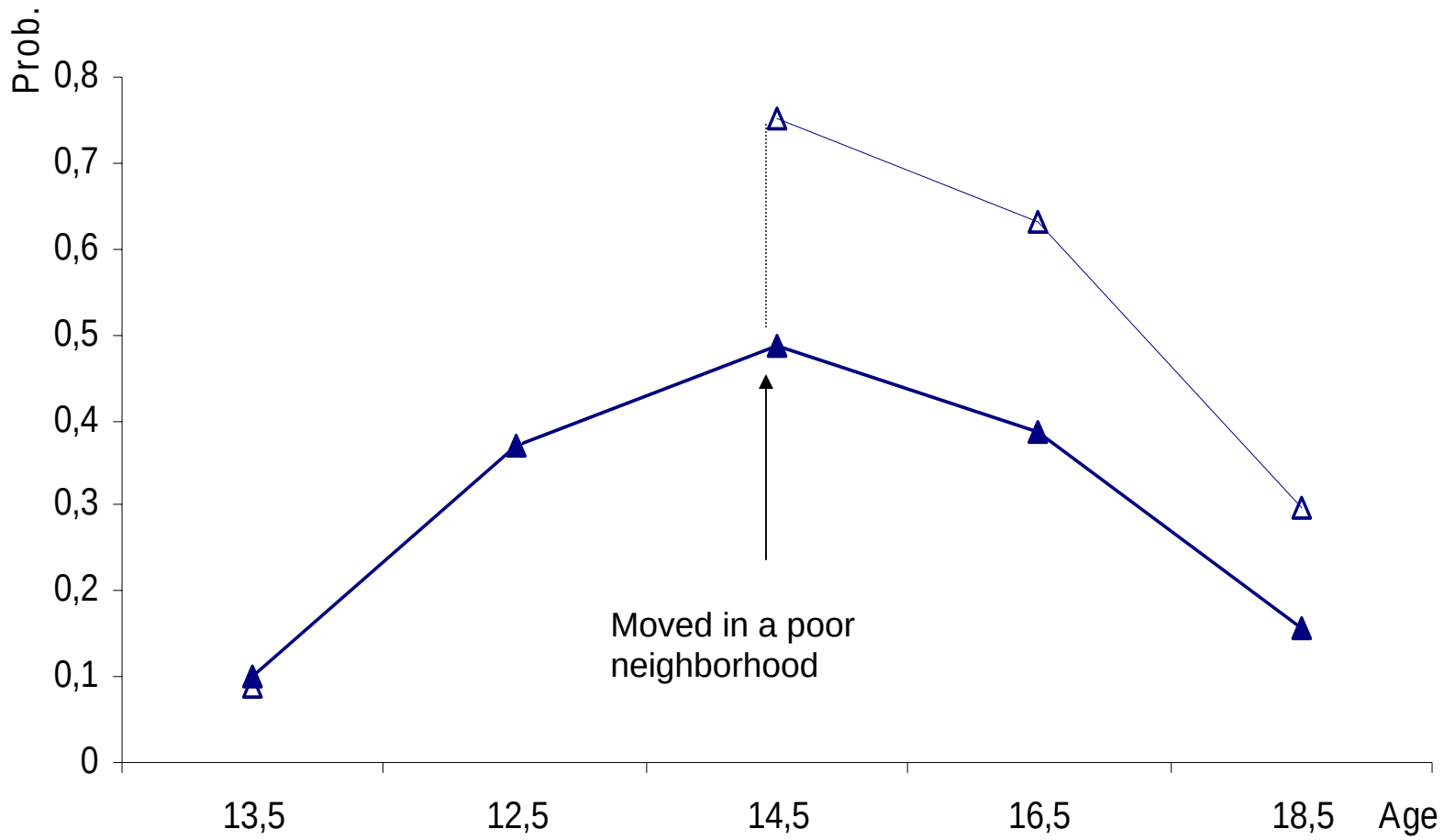


High trajectory group:
Impact of moving *in* a poor neighborhood on gang membership

	Parameter estimates
Risk factors at age 10	
Sex	-0.19
Number of moves before age 10	0.14
SES	-0.44 *
Intact family	-0.52
Hyperactivity	0.14 ***
Time-varying covariates	
Moved in a poor neighborhood	1.16 *
Moved	-0.13
Income category decreased	0.19
Became single	-0.02

Note: *** $p < .001$. ** $p < .01$. * $p < .05$. † $p < .10$. (one-tailed)

Moving *in* a poor neighborhood : Impact on delinquent group membership



High trajectory group:

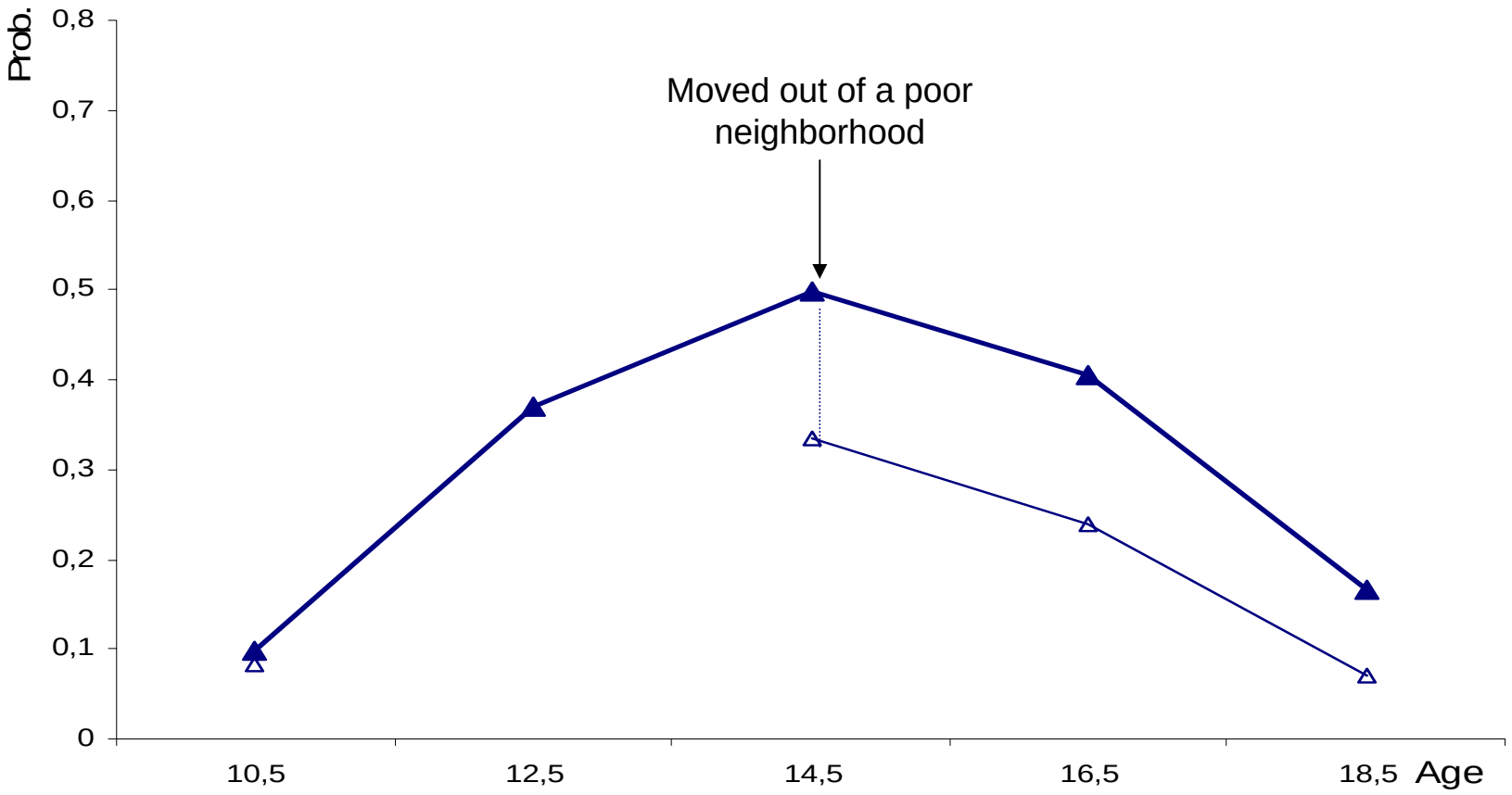
Impact of moving *out* of a poor neighborhood on gang membership

	Parameter estimates	
	Model A	Model B
Risk factors at age 10		
Sex	-0.10	-0.01
Number of moves before age 10	0.13	0.12
SES	-0.44 *	-0.47 **
Intact family	-0.50	-0.61 *
Hyperactivity	0.15***	0.14 ***
Time-varying covariates		
Moved out of a poor neighborhood	-1.30 **	-0.91
Moved	0.49	0.53 *
Income category increased		-0.20
Became non-single		-1.84 *

Note: *** $p < .001$. ** $p < .01$. * $p < .05$. † $p < .10$. (one-tailed)

Moving *out* of a poor neighborhood : Impact on delinquent group membership

(Model A)



Discussion

Summary

- Both entry and exit from poor neighborhoods significantly affect the probabilities of gang membership, but only for individuals with a developmental history of affiliation with deviant peers

- However, the impact of *exiting* a poor neighborhood is explained by other concomitant events (family reconstitution)

Underlines the importance of studying the impact of neighborhood poverty on adolescents & children in Canada

- Poverty is spatially concentrated in Canada and this concentration effect is increasing
- Single parents and couples with children generally live longer in low income neighborhoods than childless couples and unattached individuals (average 4 to 5 years).
- Possibly important for other children or adolescent outcomes as well

(Caryl Arundel and Associates & Henson Consulting Ltd., 2003; Frenette, Picot, & Sceviour, 2004; Leventhal & Brooks-Gunn, 2000; Myles, Picot, & Pyper, 2000)