Examining Developmental Trajectories and Predictors of Childhood Prosocial Behavior: A Latent Class Growth Modeling Approach

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Introduction

- Prosocial behavior is associated with a range of positive outcomes including academic achievement and peer acceptance in school age (Carlo, 2014)
- Although prosocial development generally increases from childhood through adolescence, studies utilizing a person-centered approach imply that prosocial behavior grows heterogeneously (Eisenberg & Spinrad, 2014)
- Peer play interaction is a crucial interpersonal realm where children practice and learn about social skills (Coolahan et al., 2000)
- Self-control as an intrapersonal characteristic has been found to be robustly related to prosocial behavior (Williams & Berthelsen, 2017)
- **Study Aim**: Identify distinct prosocial trajectories during the school years and early interpersonal and intrapersonal precursors of such trajectories
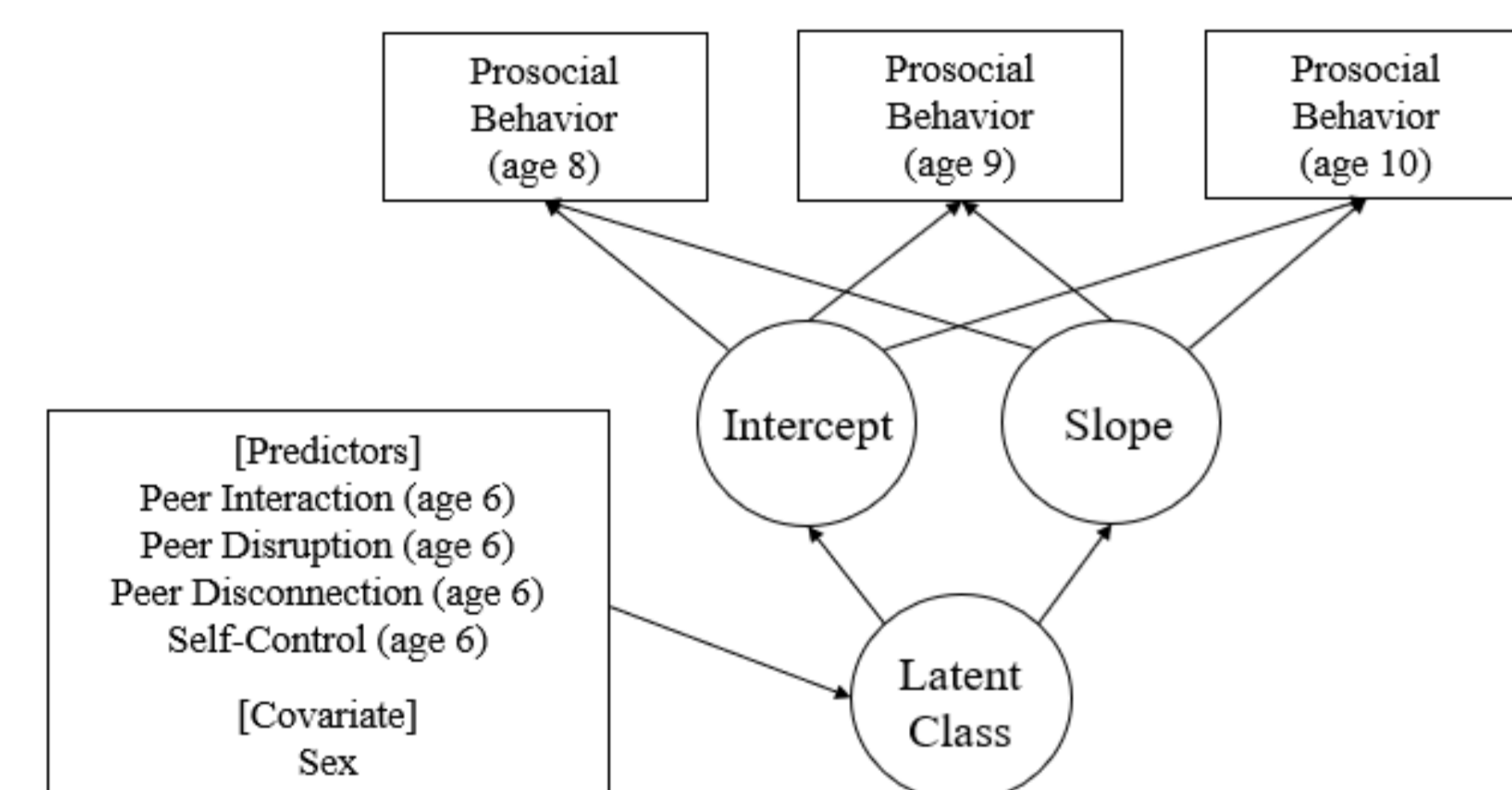

Fig 1. Diagrammatic representation of this study aims

Method

Participants: 1,201 children (48.6% girls) from the Panel Study on Korean Children

Measures

- **Prosocial Behavior** Teacher-reported at ages 8, 9, 10 with the Strengths and Difficulties Questionnaire (Goodman, 2001): 5 items, respectively αs= .84-87
- **Peer play interaction** Teacher-reported at age 6 with the Penn Interactive Peer Play Scale (Fantuzzo et al., 1998): Positive Interaction(9 items, αs= .81), Peer Disruption(13 items, αs= .89), Peer Disconnection (8 items, αs= .88)
- **Self-control** Mother-reported at age 6 with the Social Skills Rating System (Gresham & Elliott, 1990): 8 items, α= .85

Results

- Latent class growth analyses(LCGA) revealed three distinctive latent trajectories of prosocial behavior across age 8 through 10
- 'High-increase' (37.9%), 'Moderate-stable' (59.7%), and 'Low-decrease' (2.4%) classes

Table 1. Latent Class Growth Analyses Estimates for Prosocial Behavior

Class	N(%)	Intercept M (SE)	Slope M (SE)
High-increase	455 (37.9%)	2.512*** (0.023)	0.153*** (0.015)
Moderate-stable	717 (59.7%)	2.217*** (0.045)	-0.055** (0.02)
Low-decrease	29 (2.4%)	1.821*** (0.134)	-0.213* (0.088)

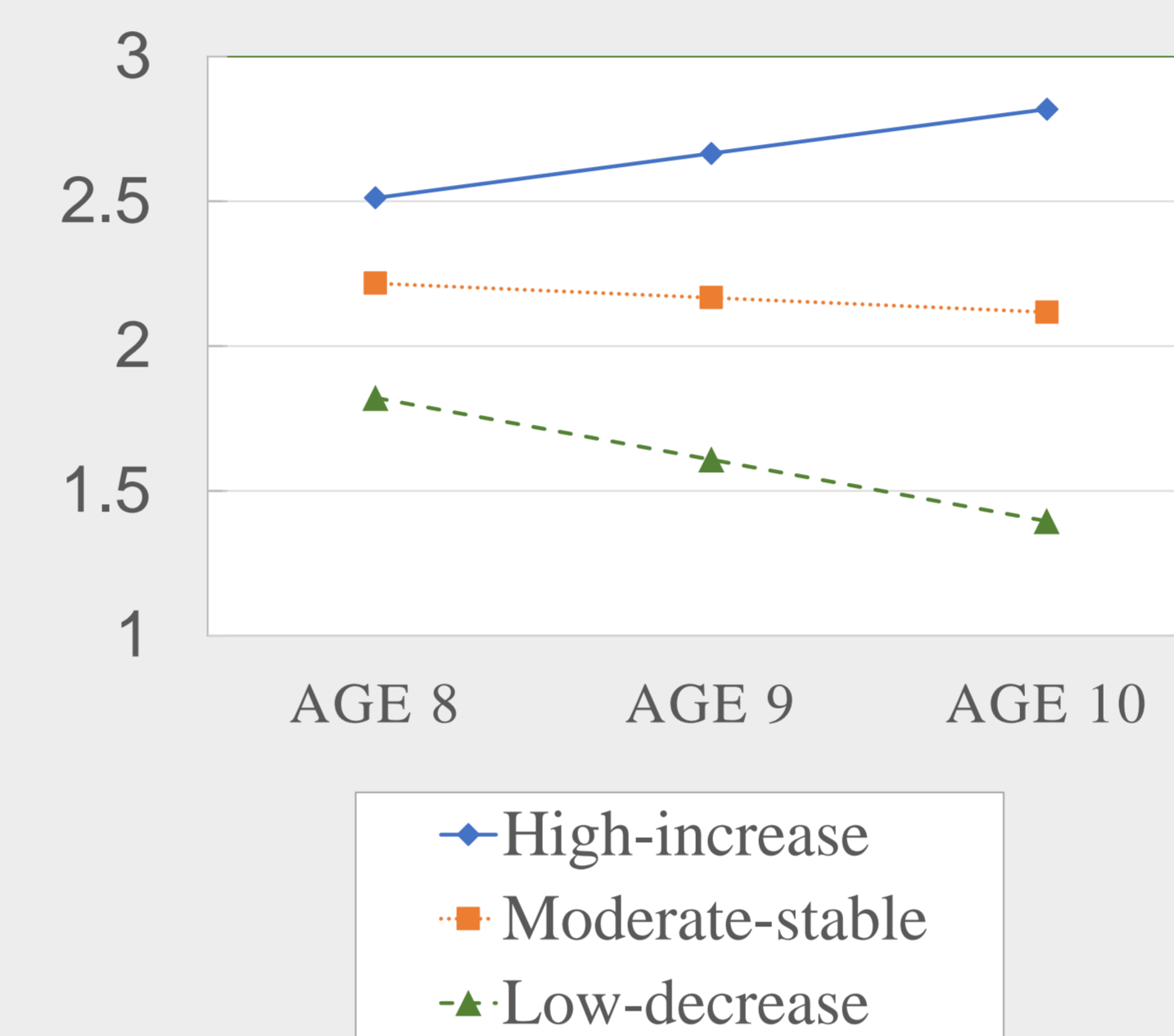$^*p < .05, ^{**}p < .01, ^{***}p < .001.$

Fig 2. Developmental trajectories of prosocial behavior from 8 to 10 years of age

- Based on multinomial logistic regressions from r3step, positive interaction, peer disruption and self-control were significant determinants of the classes.
- Higher positive interaction and lower peer disruption positively predicted a higher chance of being in 'High-increase' class
- Lower self-control predicted a higher chance of being in 'Low-decrease' class

Table 2. Interpersonal and Intrapersonal Precursors Predicting Prosocial Development Latent Classes

Reference group		Moderate				High	
Comparison group		High		Low		Low	
		B	SE	B	SE	B	SE
Peer Play Interaction (age 6)	Positive Interaction	1.26***	0.357	-0.040	0.584	-1.306*	0.608
	Peer Disruption	-0.917***	0.280	0.165	0.634	1.082	0.626
	Peer Disconnection	0.301	0.249	-0.233	0.563	-0.535	0.551
Self-Control (age 6)		-0.293	0.334	-2.23*	0.851	-2.213*	0.827
Sex (boys=0, girls=1)		1.353***	0.255	-1.667	1.638	-3.137*	1.592

$^*p < .05, ^{***}p < .001.$

Discussion

- Three latent classes of prosocial development during school age are identified: About 60% of children showed a moderate-stable pattern, but 40% showing a changing pattern
- Low-decrease class (2.4% of the sample) depicts a pattern in which prosocial behavior gradually declines over time, which may require early identification and intervention.
- Both increasing positive peer interactions and reducing peer disruption during play were positively associated with children's prosocial development: Establishing a play environment that emphasizes sharing, taking turns, and cooperation can be beneficial for promoting prosocial behavior (Cigala et al., 2015)
- Low self-control was identified as a risk factor for Low-decrease prosocial development: Self-control can be a target of early intervention to help children regulate impulses and consider the needs and interests of others (Joosten et al., 2015)

References

Carlo, G. (2014). The development and correlates of prosocial moral behaviors. In M. Killen & J. G. Smetana (Eds.), Handbook of moral development (2nd ed., pp. 208–234). New York, NY: Psychology Press.

Cigala, A., Mori, A., & Fangareggi, F. (2015). Learning others' point of view: Perspective taking and prosocial behaviour in preschoolers. Early Child Development and Care, 185(8), 1199-1215.

Coolahan, K., Fantuzzo, J., Mendez, J., & McDermott, P. (2000). Preschool peer interactions and readiness to learn: Relationships between classroom peer play and learning behaviors and conduct. Journal of educational psychology, 92(3), 458.

Eisenberg, N., & Spinrad, T. L. (2014). Multidimensionality of Prosocial Behavior. Prosocial Development, 17–39.

Fantuzzo, J., Sutton-Smith, B., Coolahan, K. C., Manz, P. H., Canning, S., & Debnam, D. (1995). Assessment of preschool play interaction behaviors in young low-income children: Penn Interactive Peer Play Scale. Early Childhood Research Quarterly, 10(1), 105–120.

Joosten, A., van Dijke, M., Van Hiel, A., & De Cremer, D. (2015). Out of control!? how loss of self-control influences prosocial behavior: The role of power and moral values. PLOS ONE, 10(5).

Williams, K. E., & Berthelsen, D. (2017). The development of prosocial behaviour in early childhood: Contributions of early parenting and self-regulation. International Journal of Early Childhood, 49, 73-94.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. Journal of the American Academy of Child & Adolescent Psychiatry, 40(11), 1337-1345.

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