



UNIVERSITY *of* MARYLAND
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Modeling Longitudinal Cumulative Ecological Risk for Child Maltreatment: Opportunities and Challenges

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Dissertation:

***Neighborhood and cumulative ecological risk:
Predicting physical abuse and neglect in an urban
longitudinal studies of child abuse and neglect
(LONGSCAN) sample****

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Presentation Overview

➤ Dissertation Study

- Objectives
- Theory
- Literature

➤ Question One: Risk Thresholds

➤ Question Two: Parceling Risk

➤ Question Three: Operational Definition of Child Maltreatment

Study Objectives

1. To explore the associations between neighborhood structural characteristics and parent perceptions of neighborhood processes as predictors of child physical abuse and neglect.
2. To develop a longitudinal cumulative ecological-transactional risk model to predict child physical abuse and neglect.

Neighborhood and Ecological Studies of Child Maltreatment

➤ Meta-analyses:

- Freisthler, Merritt, and LaScala (2006)
 - 16 of 18 studies reviewed were aggregate level
- Coulton, Crampton, Irwin, Spilsbury and Korbin (2007)
 - 19 of 25 studies reviewed were aggregate level

➤ Since 2007, additional multilevel studies explore neighborhood structure and/or process.

- Social Disorganization Theory- Social Distress Scale (Coulton, Korbin, and Su, 1996)
- Economic Indicators (e.g. GINI coefficient, foreclosures)
- Alcohol outlets and drinking behaviors (e.g. Freisthler and others)
- Process (e.g. social support, collective efficacy)

Cumulative Risk to Predict Child Maltreatment

- Child maltreatment is often most included in cumulative risk models as a predictor of other outcomes.
- Cumulative risk methods have been used to predict child maltreatment related outcomes.
- Selection of variables and risk thresholds were often based on convenience and not theoretically grounded.
- Neighborhood markers were rarely represented.
 - Only three studies included any neighborhood predictors.

Methodological Advantages of a Cumulative Risk Index (CRI)

- Simplicity in calculation
- Minimal statistical power required
- Not subject to colinearity
- Lends to parsimony
- Professionals and policy makers without methodological training can easily understand the methodology of a CRI, which broadens practical applications.

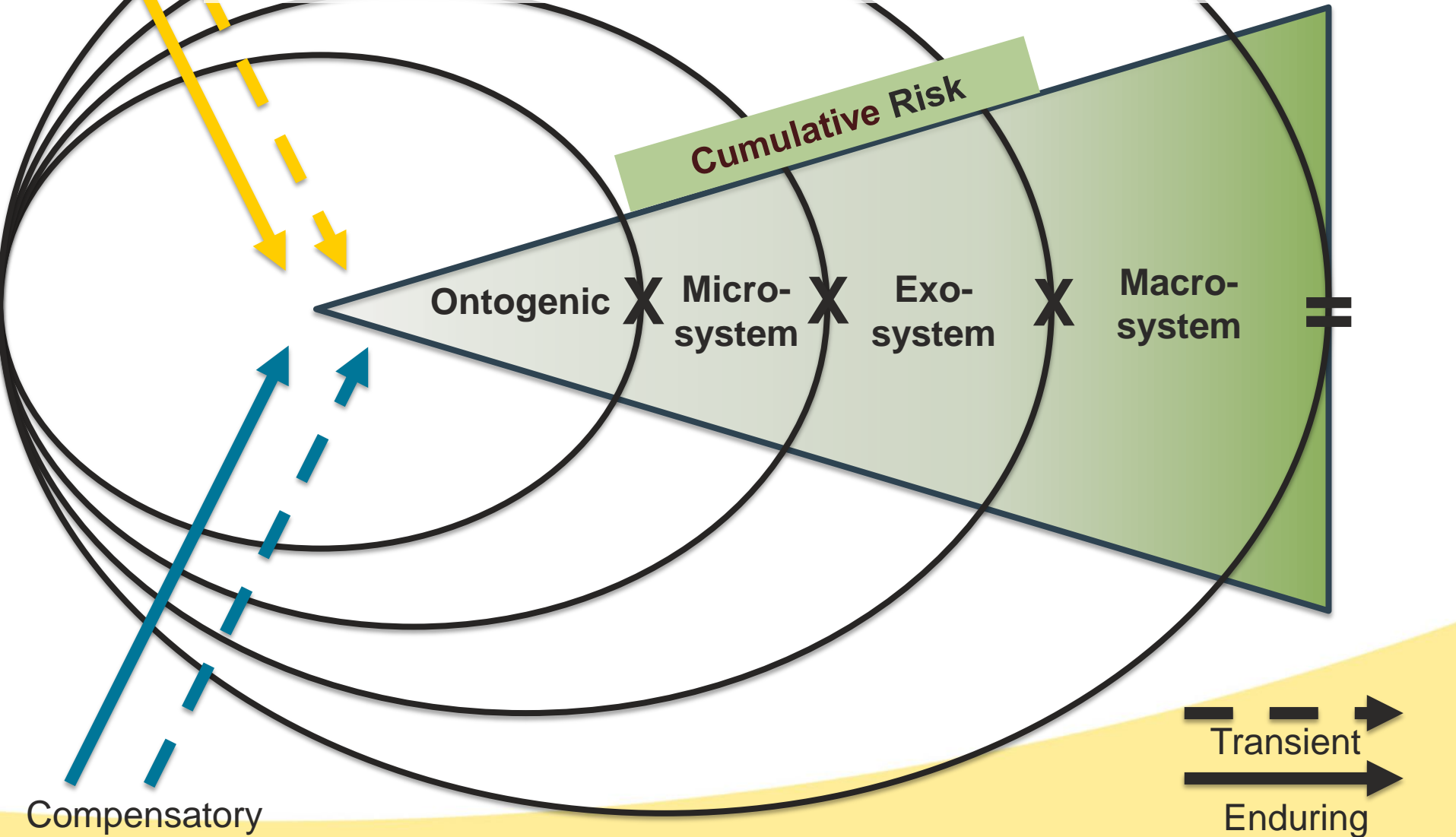
(Evans, Li, Whipple, 2013).

Theoretical Background

- Ecological Transactional Framework* (Cicchetti & Lynch, 1993)
- Cumulative Risk Theory* (Rutter, 1979)
 - Toxic Stress (Shonkoff & Garner, 2012)
 - Allostatic Load (McEwan & Stellar, 1993)
- Social Disorganization Theory (Shaw & McKay, 1942)

Potentiating

Cumulative Ecological-Transactional Model of Risk



Baltimore LONGSCAN Sample

- Three groups recruited from pediatric clinics:
 1. Infants and toddlers who were diagnosed with Failure to Thrive (FTT);
 2. Infants at risk for HIV, primarily through maternal substance abuse prenatally;
 3. Control group of pediatric patients.
- Born between 1988 and 1991
- Urban neighborhoods near pediatric clinics in West Baltimore.
- 93% of the 322 children recruited identified as African American.



Baltimore







Inner Harbor Panorama



Panoramic view of Baltimore along the Inner and Outer Harbor at dusk



Emily Painter, 7, plays in front of vacant rowhouses next to her home on Baltimore's West Side. (Amanda Voisard/For The Washington Post)

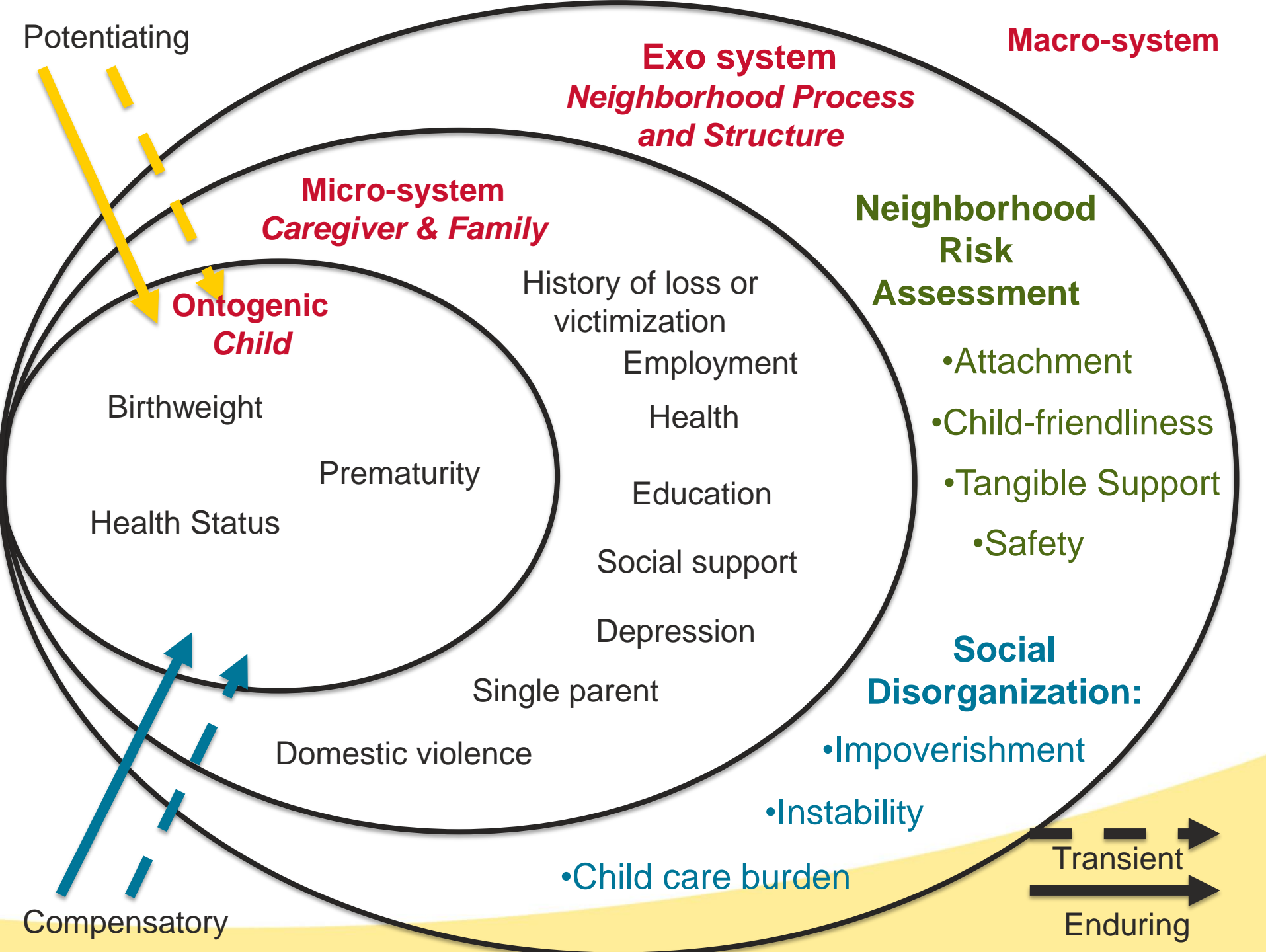




Patrick Semansky/Associated Press

Procedure

- Participant addresses at age six will be extracted from Baltimore LONGSCAN original paper files to ID keyed database.
- Addresses will be geocoded using 1990 census data.
- Geocodes will be connected with LONGSCAN longitudinal data from age 6 to 18.
- IRB protocol #HP-00041429 (PI: Dubowitz)



Question One: Risk Thresholds

➤ Ideal Strategies

- Not sample dependent
- Theoretically justified
- Generalizable

➤ Approaches in the literature

- Percentile rank (e.g. 75th, 85th)
- Normalized data

Ontogenic and Microsystem Level Risk

Ontogenic

- Low Birthweight
- Prematurity
- Child Health Status

Risk Marker

(*<2500g*)
(*<37 weeks*)
(*poor or fair rating*)

Microsystem

➤ Primary Care Giver

- Education
- Employment
- Income
- Health Status
- History of loss or victimization
- Social support
- Mental health

(*less than HS*)
(*not employed*)
(*Public Assistance AFDC/TANF*)
(*poor or fair rating*)
(*affirmative*)
(*FSSQ <2 mean score*)
(*CES-D >16*)

➤ Family

- Domestic violence
- Marital Status

(*CTS, endorsed Physical Violence items*)
(*Not Partnered*)

Exosystem Level Risk

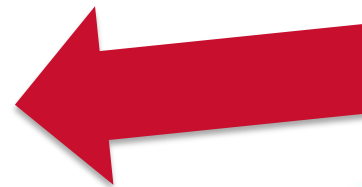
➤ Neighborhood Processes

- Attachment
- Safety
- Child-friendliness
- Tangible Support

Neighborhood Risk Assessment (LONGSCAN, 1991)
Mean scale score <2
“Never true” or “Almost never true”

➤ Neighborhood Structure

- Impoverishment
- Instability
- Child care burden



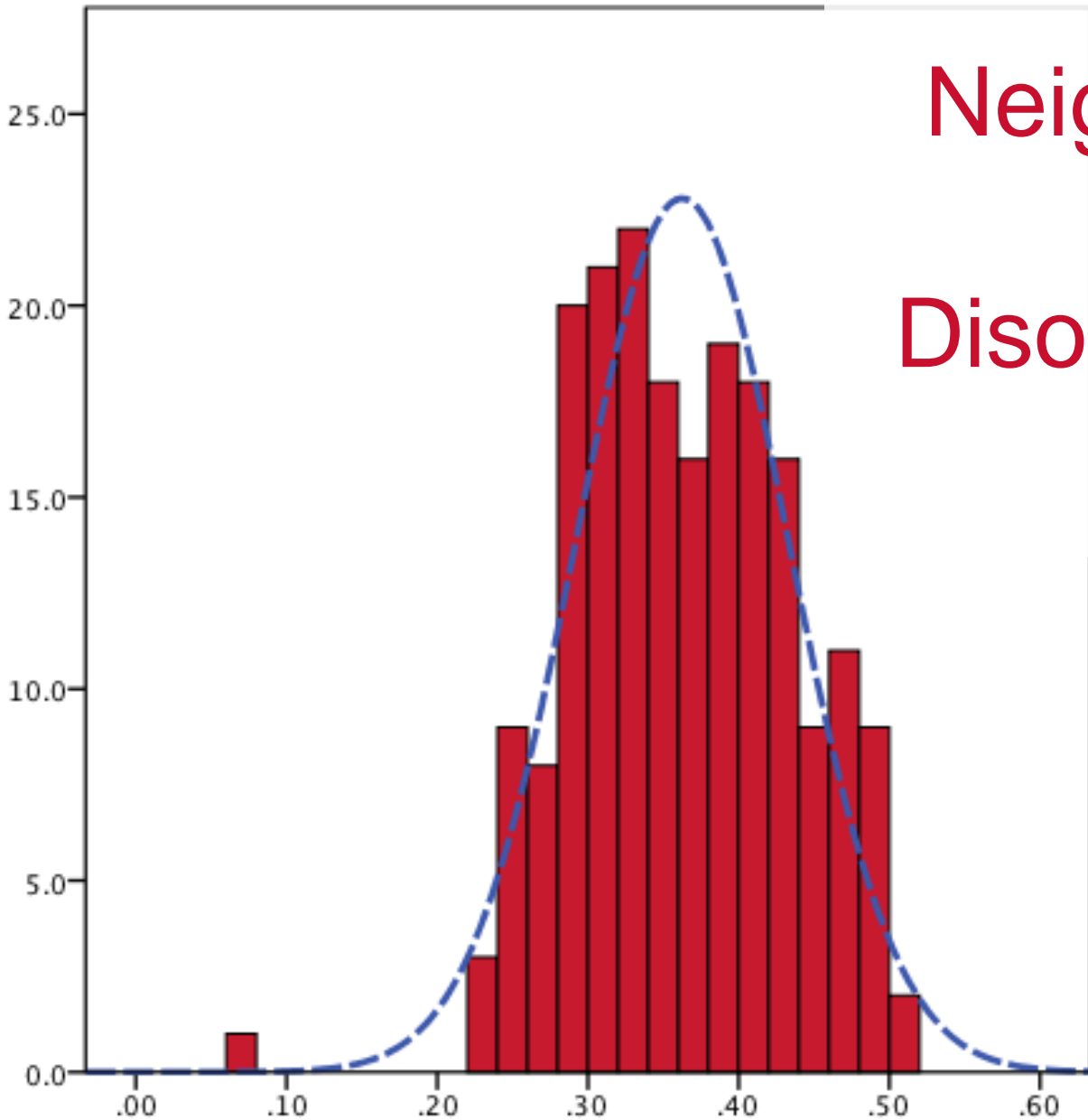
**How to
determine
risk
threshold?**

Hyde (2002) Replication of Coulton et al. (1995)

Variable	Operational Definition	Loading
Impoverishment		
Unemployment	% residents unemployed	.80
Family Headship	% female headed households	.83
Poverty	% poor persons	.80
Vacant housing	% vacant housing units	.53
<i>Child/Adult Ratio</i>	<i># children (0-12)/ adults (21+)</i>	<i>.77^a</i>
Instability		
Movement 85-90		.90
Tenure	% current residence <10 years	.92
Movement 89-90		.91
Child Care Burden		
Elderly	% population over 65	-.50
Male/Female Ratio	adult male (21-64)/ Adult female (21-64)	-.90
<i>Black</i>	<i>% Identifying as Black</i>	<i>.67^b</i>

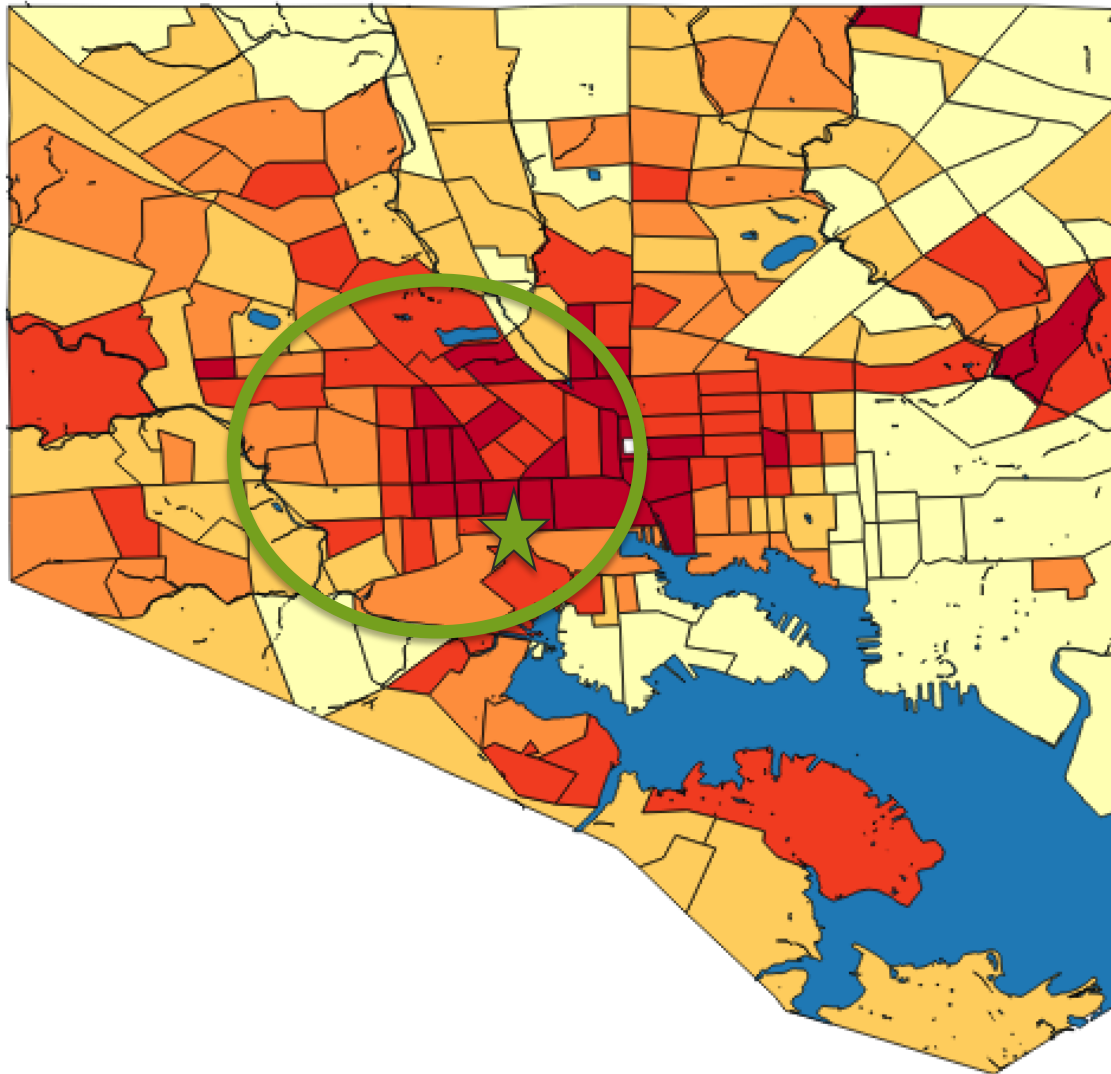
Explained 73.3% of the variance in child maltreatment rates

Neighborhood Social Disorganization Scale

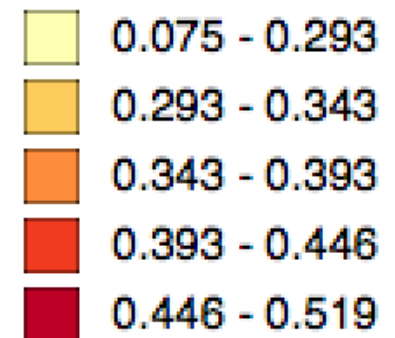


Mean = .3625
SD = .070
Census Tracts
N = 202

Baltimore Social Disorganization



Legend:
Mean Scale Score



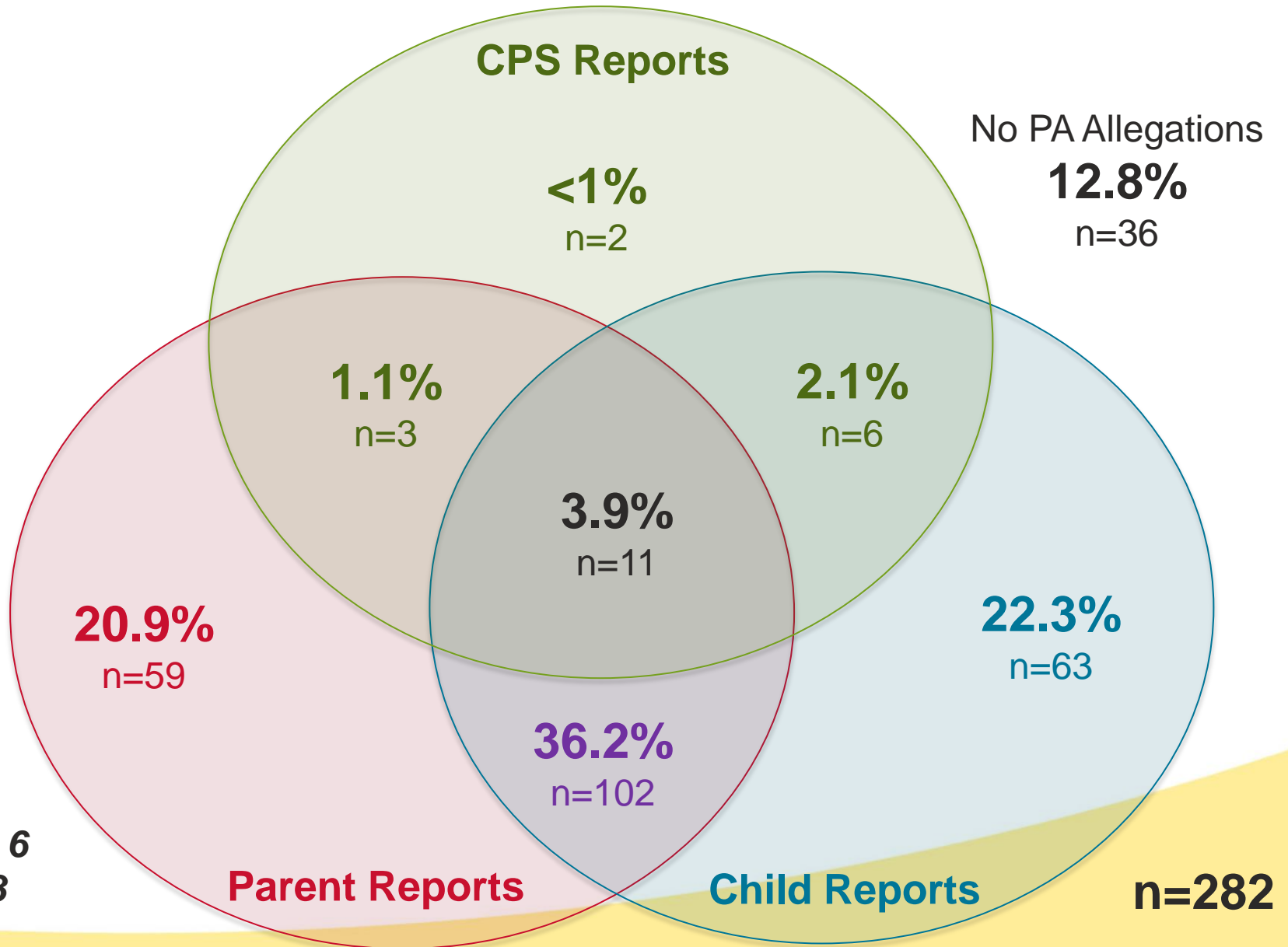
Question Two: Parceling Risk

- MacKenzie, Kotch & Lee (2011)
 - Series of binary logistic regressions
 - Each marker entered separately with total number of other risks present
- Hierarchical entry
 - Will not account for cumulative risk effects
- **Other approaches?**

Question Three: Operational Definition of Child Maltreatment

- CPS reports represent “tip of the iceberg” (Sedlak et al., 2010).
- LONGSCAN data includes three sources
 - CPS reports (MMCS; English, Graham , Litrownik, Everson, & Bangdiwala, 2005)
- Parent reports
 - Conflict Tactics Scale (Straus, 1979)
- Child reports
 - History of Physical Abuse (LONGSCAN,1998)

Physical Abuse*



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