Negative Parenting and Externalizing Behavior Across Preschool: A Cross-lagged Analysis

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Children's Externalizing Behaviors and Parenting

➢Previous Research:

- By early childhood, some children demonstrate escalating levels of externalizing behavior. This trajectory may be initiated during preschool (Moffitt, Caspi, Harrington, & Milne, 2002; Shaw, Gilliom, Ingoldsby, & Nagin, 2003)

➢What explains escalating externalizing behavior during preschool?:

❖*Social Interaction Theory:*
- Parents foster and exacerbate externalizing behavior through providing inconsistent discipline and modeling aggressive, hostile behavior (Arnold, O' Leary, Wolff, & Acker, 1993; Patterson, DeBaryshe, & Ramsey, 1989)

❖*Evocative Child-Effects Model:*
- Children's externalizing behaviors elicit negative parenting, which can lead to increases in externalizing behaviors (Burt, McGue, Krueger, & Iacono, 2005)

❖*Support for both developmental mechanisms, but in most studies cannot disentangle child effects from parenting effects.*

➢Behavioral Genetic Approach:

❖*A Biometric cross-lagged model can distinguish child-based genetic influences on behavior and parenting, from environmental effects*

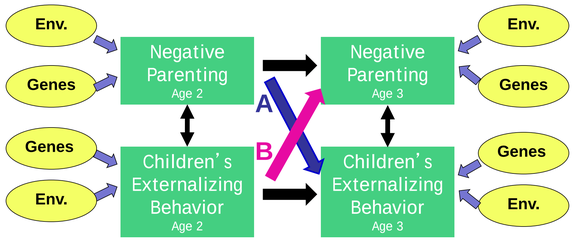
- Genetic influences = impact of children's genetic makeup on parenting and externalizing behavior
- Shared environmental influences = experiences people share that make them behave similarly or be parented similarly
- Nonshared environmental influences = unique experiences that make people behave differently or be parented differently

➢Objectives:

❖Apply a cross-lagged biometric model to examine:

- the mutual influence of mother negativity and children's externalizing behavior across preschool
- the contributions of child-based genetic and environmental factors to stability and change in parenting and externalizing behavior

Figure 1: Conceptual model for the development of externalizing behavior during the toddler years



Path A: Social Interaction Theory Path B: Evocative Child Effects

Sample

➢Boston University Twin Project (BUTP)
(Saudino & Zapfe, 2008)

- 312 same-sex twin pairs
  - 144 Monozygotic; 168 Dizygotic
  - Assessed within 2 weeks of their 2nd and 3rd birthdays
- Inclusion Criteria:
  - Birth weight > 1,750g
  - Gestational age > 34 weeks
- Recruited from Massachusetts Registry of Vital Records

Methods

➢Measures:

❖Mother's Negative Parenting (NP)

❖Mother self-reports, assessed at 2 and 3 years

❖Negative Discipline Strategies (Deater-Deckard, 2000)
- Scored 1 (non-restrictive/positive guidance) to 5 (severe/physical punishment)

❖Parent Feelings Questionnaire (Deater-Deckard, 2000)
- ❖ Feelings toward each child and the parent-child relationship
  - Scored 1 (definitely untrue) to 5 (definitely true)

❖Positive/negative emotions about the child
- Scored 1 (never) to 10 (all the time)

❖Parenting Composite: A negative parenting composite score was created via factor analysis. The internal reliability for the resulting composite was high (α's = .90 - .93).

❖Children's Externalizing Behavior (EXT)

❖Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000)
❖Mother report, assessed at 2 and 3 years

❖Externalizing Behaviors (α's .90 - .91), including:
- Inattention, Aggression, Defiance, & Destructive Behaviors
- Scored 0 (not true) to 2 (very true)

Data Analytic Strategy

➢Biometric Model Fitting

❖A cross-lagged biometric model (Figure 2) was used to assess parent and child influences on NP and EXT across preschool

❖This model estimates the contributions of latent genetic and environmental factors to variance in NP and EXT at ages 2 and 3 years

❖*Genetic Factors:* Children's genetic makeup
- Latent factors A1, A2, A3, A4

❖*Shared Environmental Factors:* Experiences that make cotwins similar to each other
- Latent factors C1, C2, C3, C4

❖*Nonshared Environmental Factors:* Unique experiences that make cotwins different from each other
- Latent factors E1, E2, E3, E4

Results

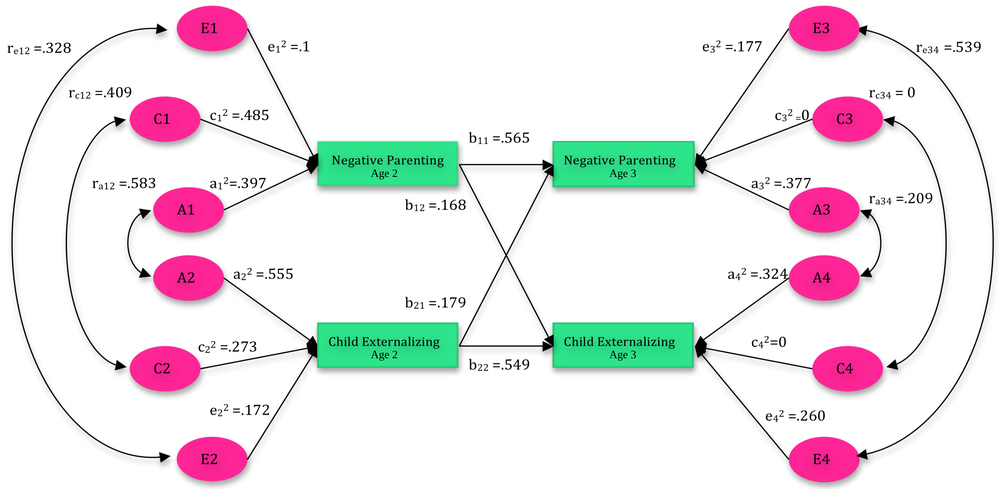
Table 1: Means and Correlations

	M	S.D.	NP T1	EXT T1	NP T2	EXT T2
Negative Parenting Age 2	0	**.72**	--			
Externalizing Age 2	11.15	7.4	**.47**	--		
Negative Parenting Age 3	0	.83	.67	**.43**	--	
Externalizing Age 3	10.99	7.6	**.43**	.68	**.53**	--

Note. all correlations significant for $p < .0001$

- Moderate stability in EXT and NP from age 2 to 3 (r=.67-.68)
- Moderate within-age correlations between EXT and NP (r=.47-.53)
- Moderate associations between EXT and NP over time (r=.43)

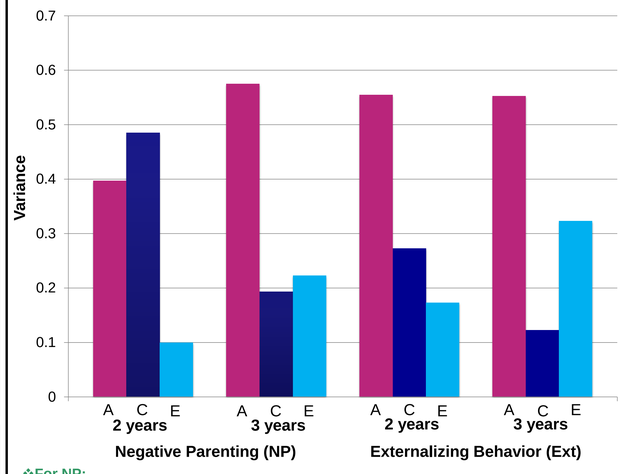
➢Figure 2: Cross-lagged Model for Negative Parenting and Child Externalizing Behavior



**p<.05*

Note: A = genetic, C = shared environment, and E = nonshared environment. r = correlations between genetic/environmental factors at each age. Figure depicts the model for one twin. The paths between genetic factors (A) for each twin were set to 1.0 for MZ twins and .50 for DZ twins. For both MZ and DZ twins, paths between shared environment (C) were set to 1.0 and paths between nonshared environment (E) were set to 0. Parameter estimates were constrained to be equal for Twin 1 and 2. Age 3 paths are residual values (age-specific effects). Analyses control for child gender.

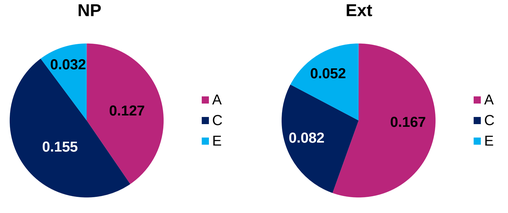
➢Figure 3: Genetic (A), Shared (C), & Nonshared (E) Environmental Contributions to Negative Parenting and Externalizing Behavior at 2 and 3 years



❖For NP:
A1, A3 = Genetic effects; C1, C3 = Shared Env. effects; E1, E3 = Nonshared Env. Effects

❖For Ext:
A2, A4 = Genetic effects; C2, C4 = Shared Env. effects; E2, E4 = Nonshared Env. Effects

➢Figure 4: Genetic (A), Shared (C), & Nonshared (E) Environmental Contributions to Stability in Negative Parenting and Externalizing Behavior from 2 to 3 yrs



Summary of Findings

➢Figure 3:

❖ Negative Parenting:
- Child-based genetic influences on NP increase with age
- Overall, environmental effects decrease with age

❖ Externalizing Behavior:
- Genetic and overall environmental influences do not change

➢Figure 4:

❖ Negative Parenting is moderately stable:
- Stability is mainly explained by shared environment effects
- Genes also contribute to stability

❖ Externalizing Behavior is moderately stable:
- Stability is mainly explained by children's genes
- Environmental factors also contribute to stability

➢Figure 2 (Mutual Influence of NP and EXT):

❖ Social Interaction Theory: NP → Ext (b_{12})
- Age 2 NP explained 2.8% of variance in Age 3 EXT. Most of this effect (61%) was related to environmental factors.

❖ Evocative Child-Effects Model: EXT → NP (b_{21})
- Age 2 EXT explained 3.2% of variance in Age 3 NP. Most of this effect (54%) was related to genetic factors.

Conclusions

➢Findings emphasize the *mutual influence* of parents and children on each other.

❖ *Evocative Child-Effects Model:*
- Child-based genetic effects contribute to NP within each age and may increase over time
- Child-based genetic effects primarily explained the cross-lagged association between NP and EXT

❖*Social Interaction Theory:*
- NP predicted changes in EXT over time
- Shared & nonshared environmental factors primarily accounted for this cross-lagged effect