



**The Interaction of Nature and Nurture  
in Antisocial Behavior:  
Studies of Resilience**

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Presentation to the Society for Prevention Research  
Preconference Workshop on  
Genes and the Environment

May 29, 2007

*Bridging the gap between research and public policy to improve the lives of  
children*

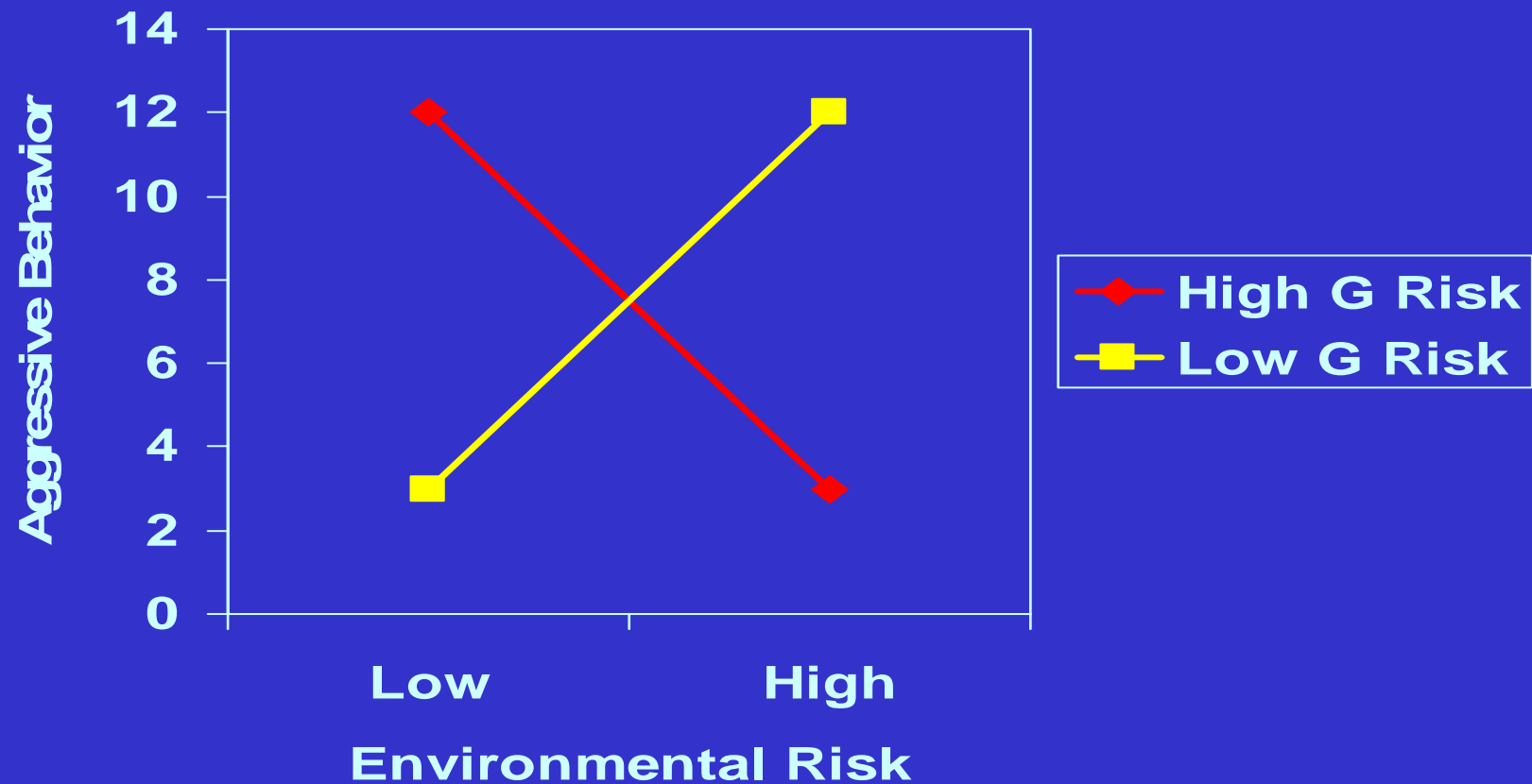
# Goals of This Talk

- 1. Propose one hypothesis
- 2. Review relevant literature
- 3. Pose theory
- 4. Impose on practice and policy

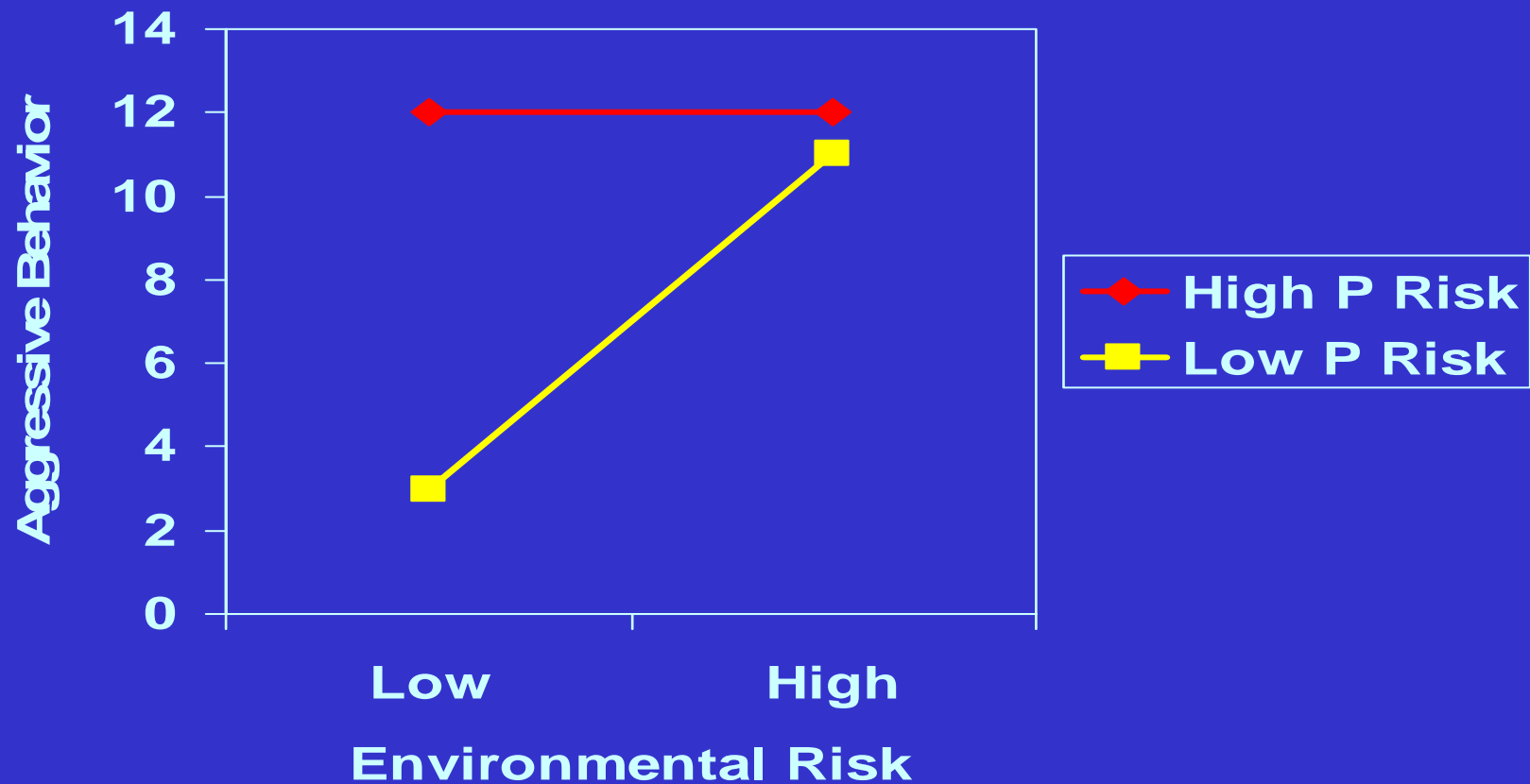
# The Interaction Hypothesis

- Although interaction effects are not dynamic transactions, they do help us understand resilience.
- Main effects of person-risk factors (G)
- Main effects of environmental risk factors (E)
- Most interaction effects have been interpreted in terms of the G effect at different levels of E.
- We interpret E effect at different levels of G.

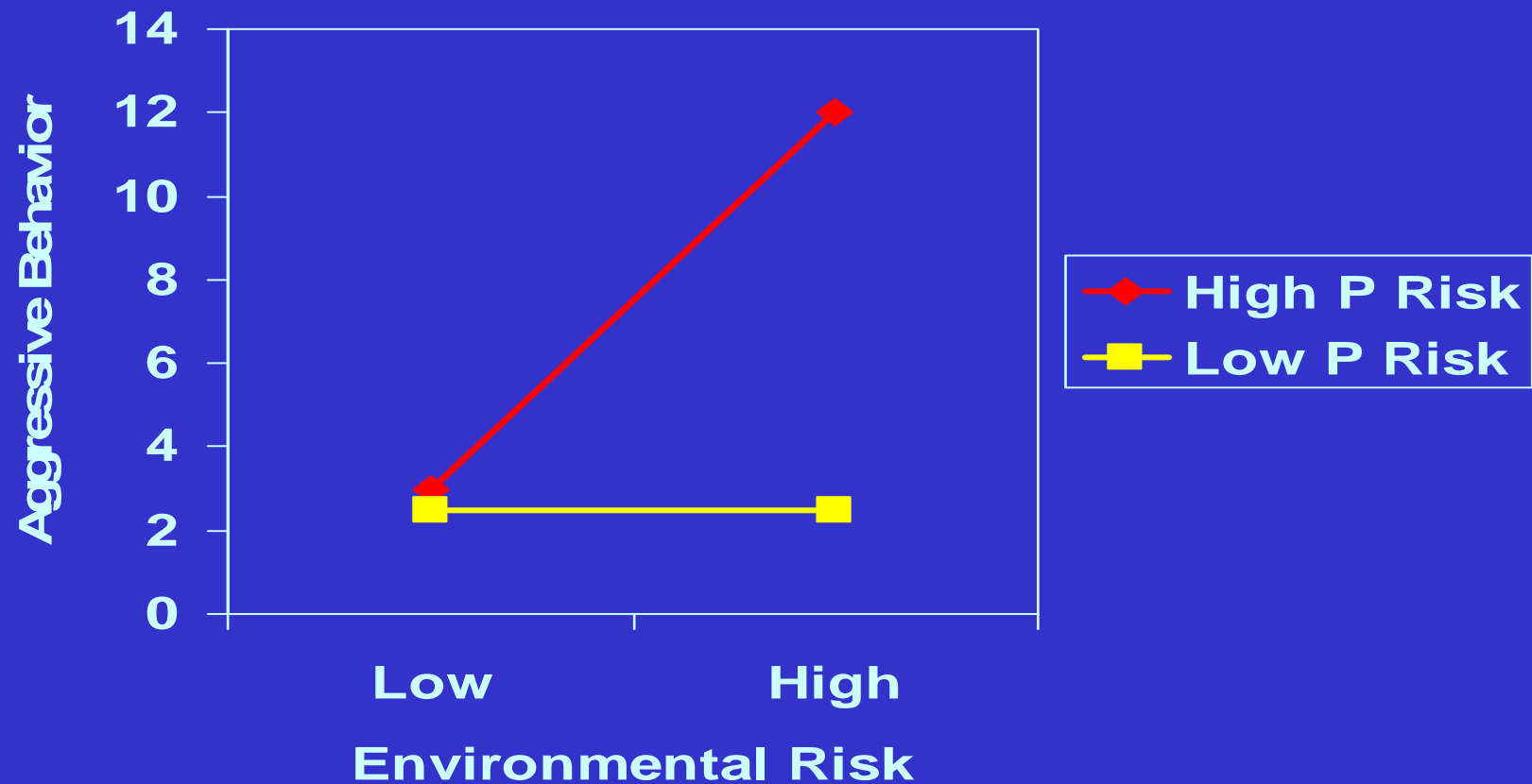
# The Hope of Garmezy



# The Hypothesis of Mednick



# Our Vulnerability Hypothesis

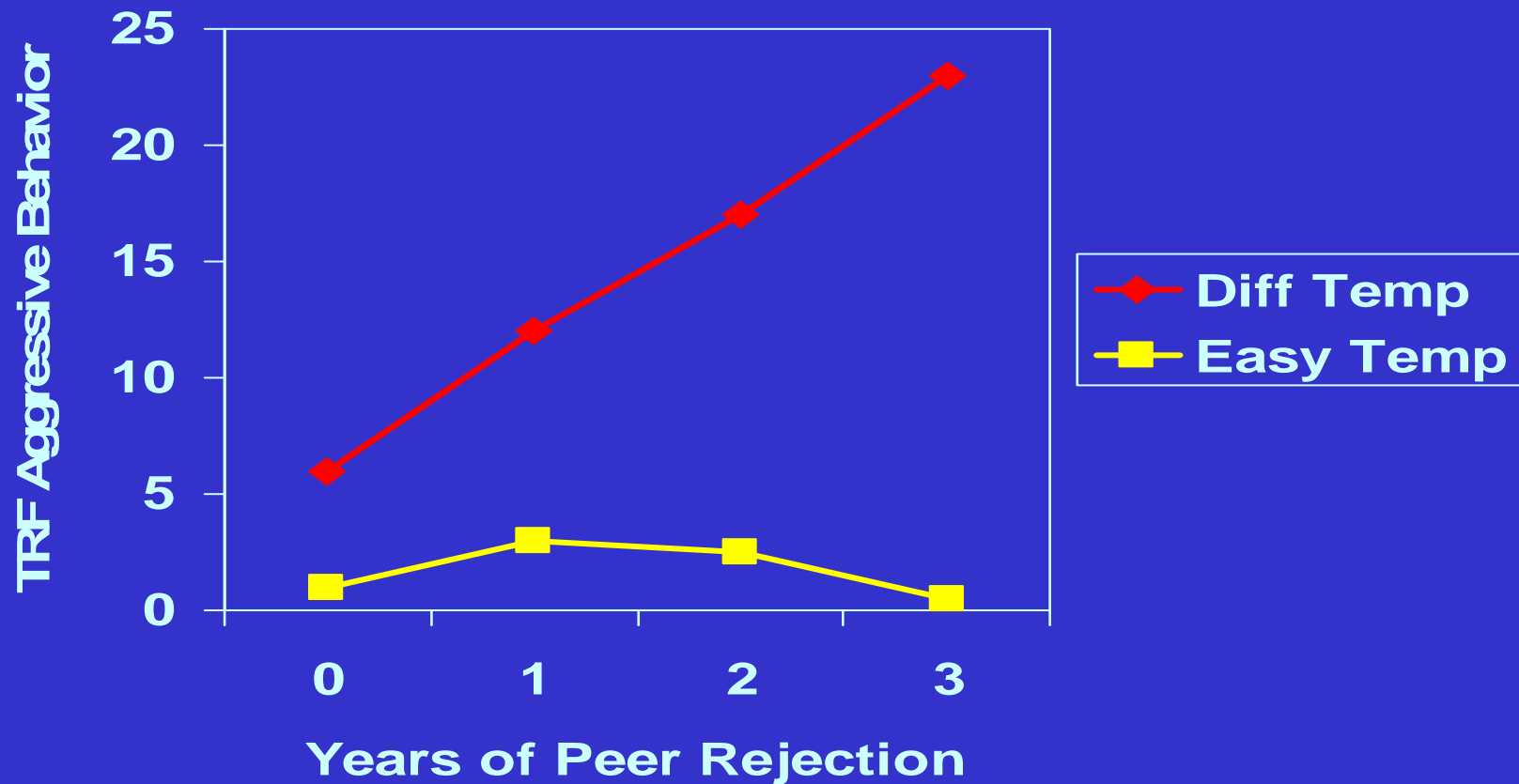


# Organization of Literature Review

- 1. Temperament X Environment
- 2. Biological Characteristics X Environment
- 3. Heritability X Environment
- 4. Gene X Environment
- 5. Person X Intervention

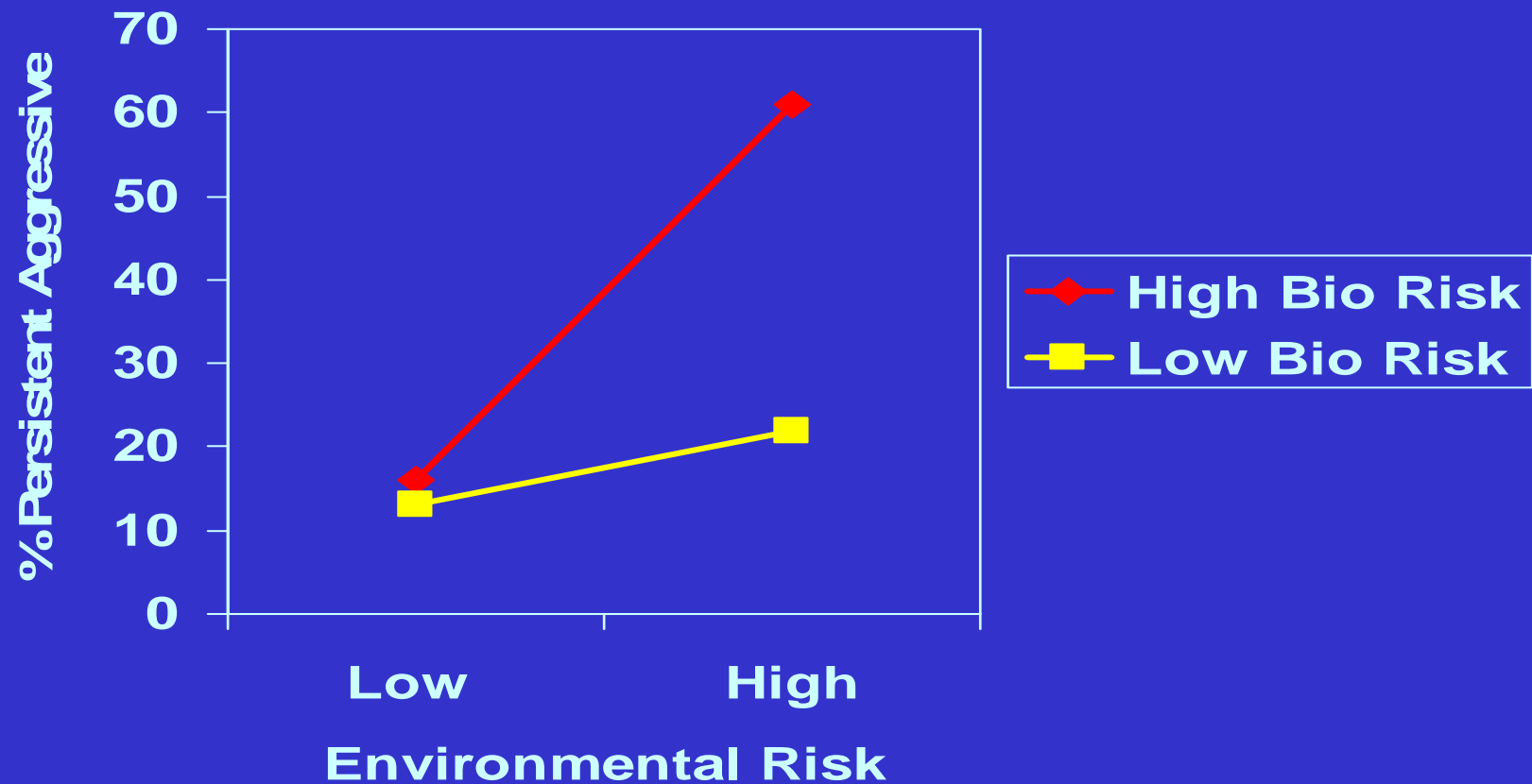
# Temperament X Environment:

Dodge et al. (2003). *Child Development*.



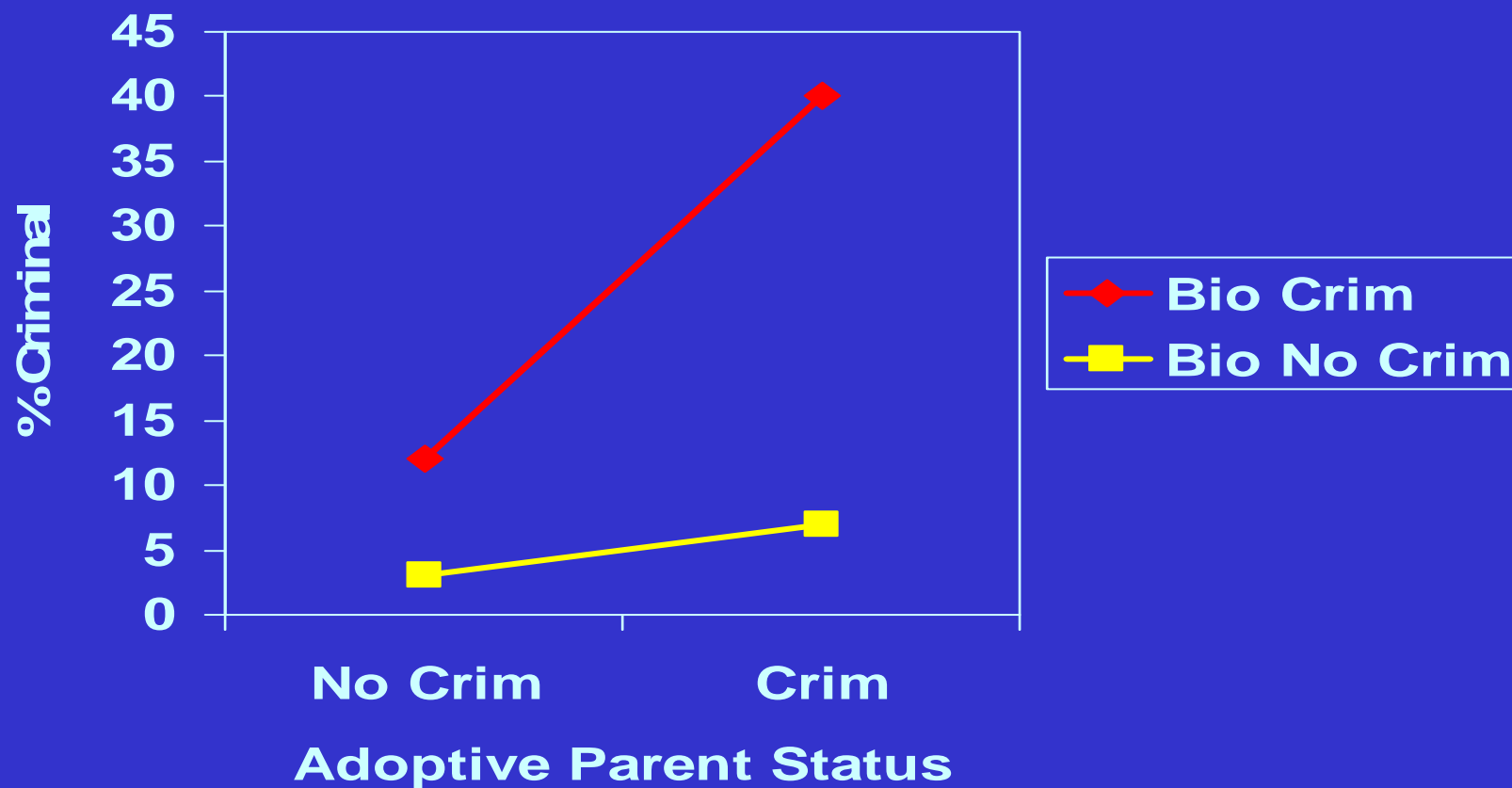
# Biological Risk X Environment:

Brennan et al. (2003). *Developmental Psychology*.



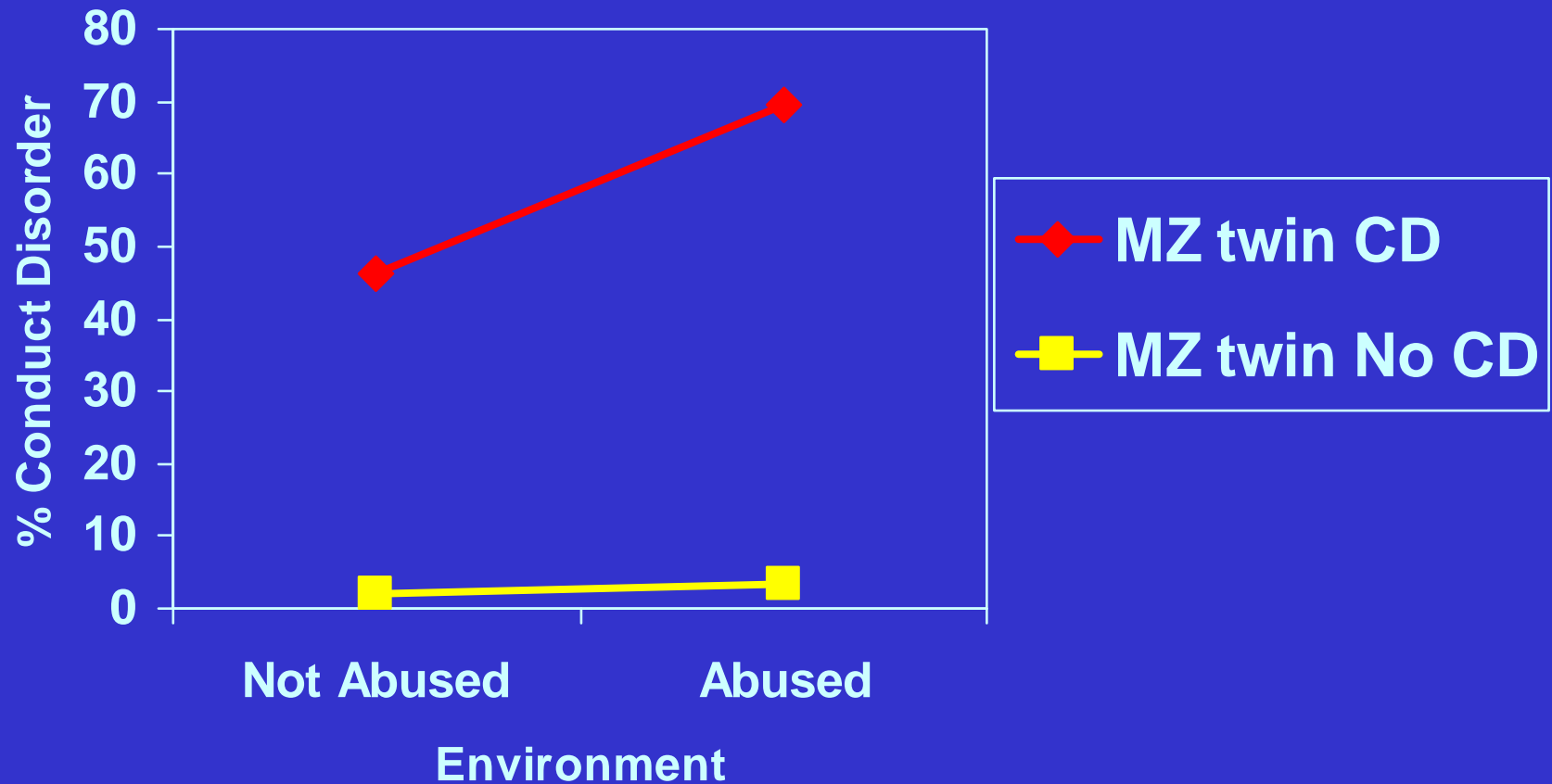
# Heritability X Environment:

Cloninger et al. (1982). *Arch Gen Psychiatry*.



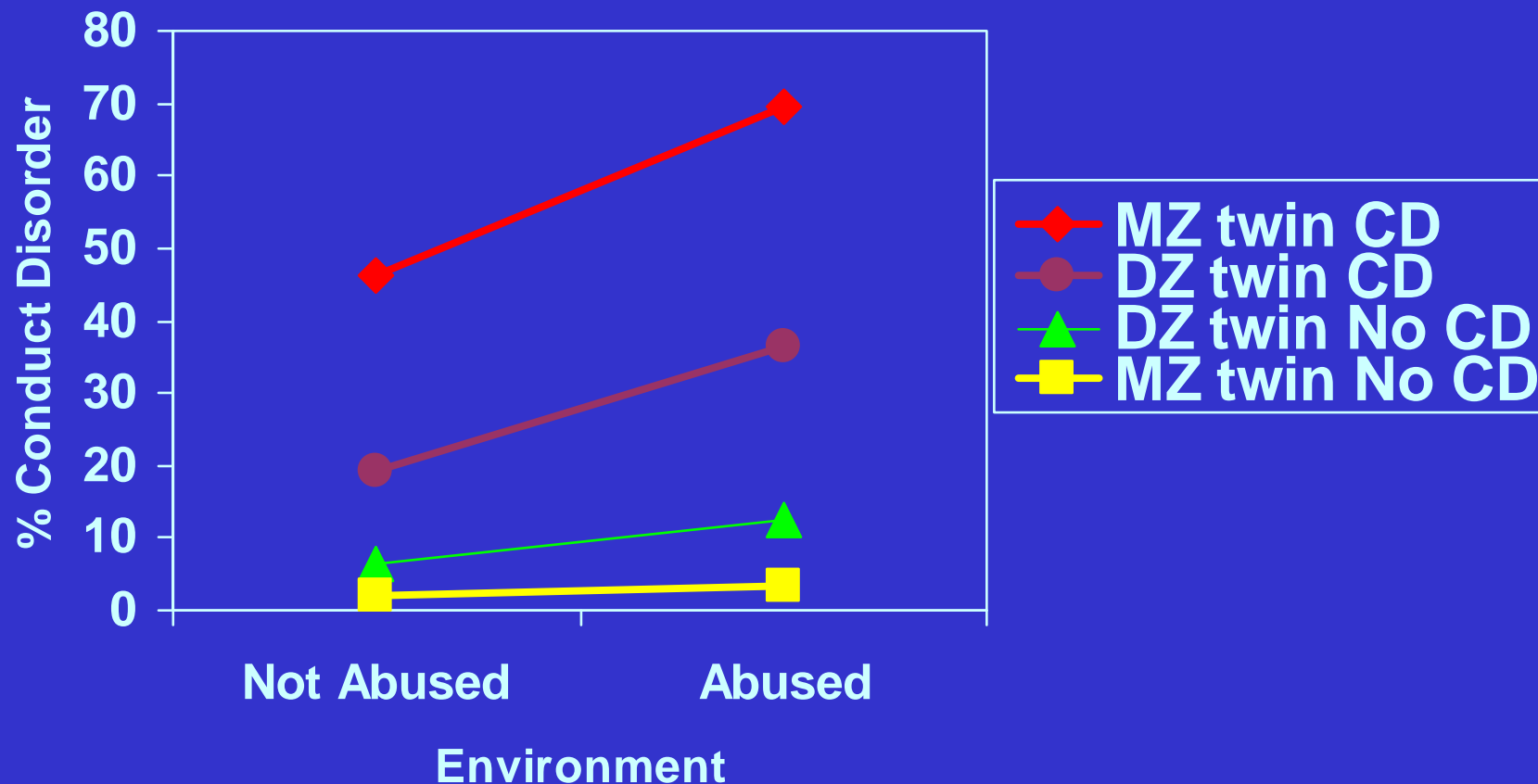
# Heritability X Environment:

Jaffee et al. (2005). *Dev & Psychopathology*.



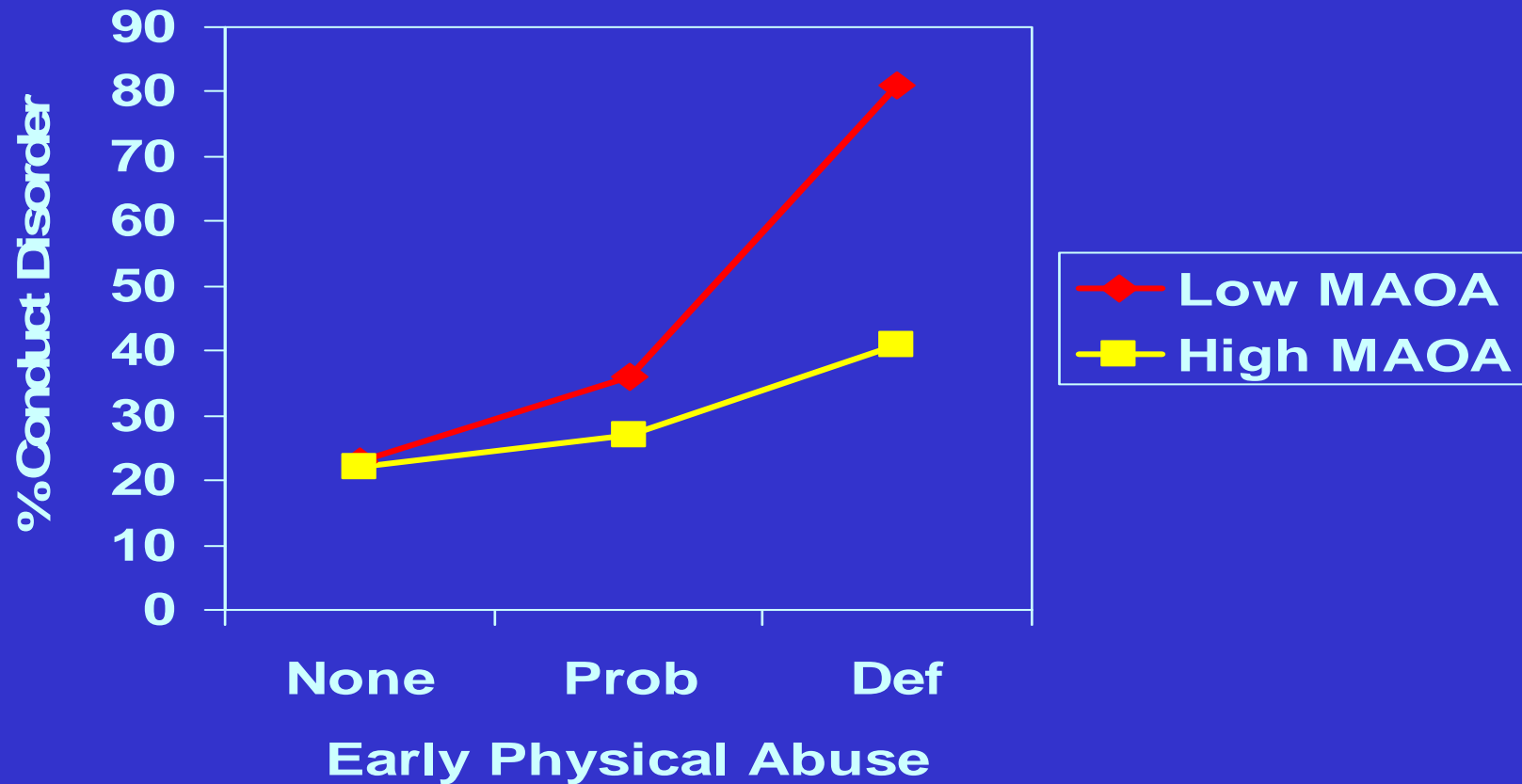
# Heritability X Environment:

Jaffee et al. (2005). *Dev & Psychopathology*.



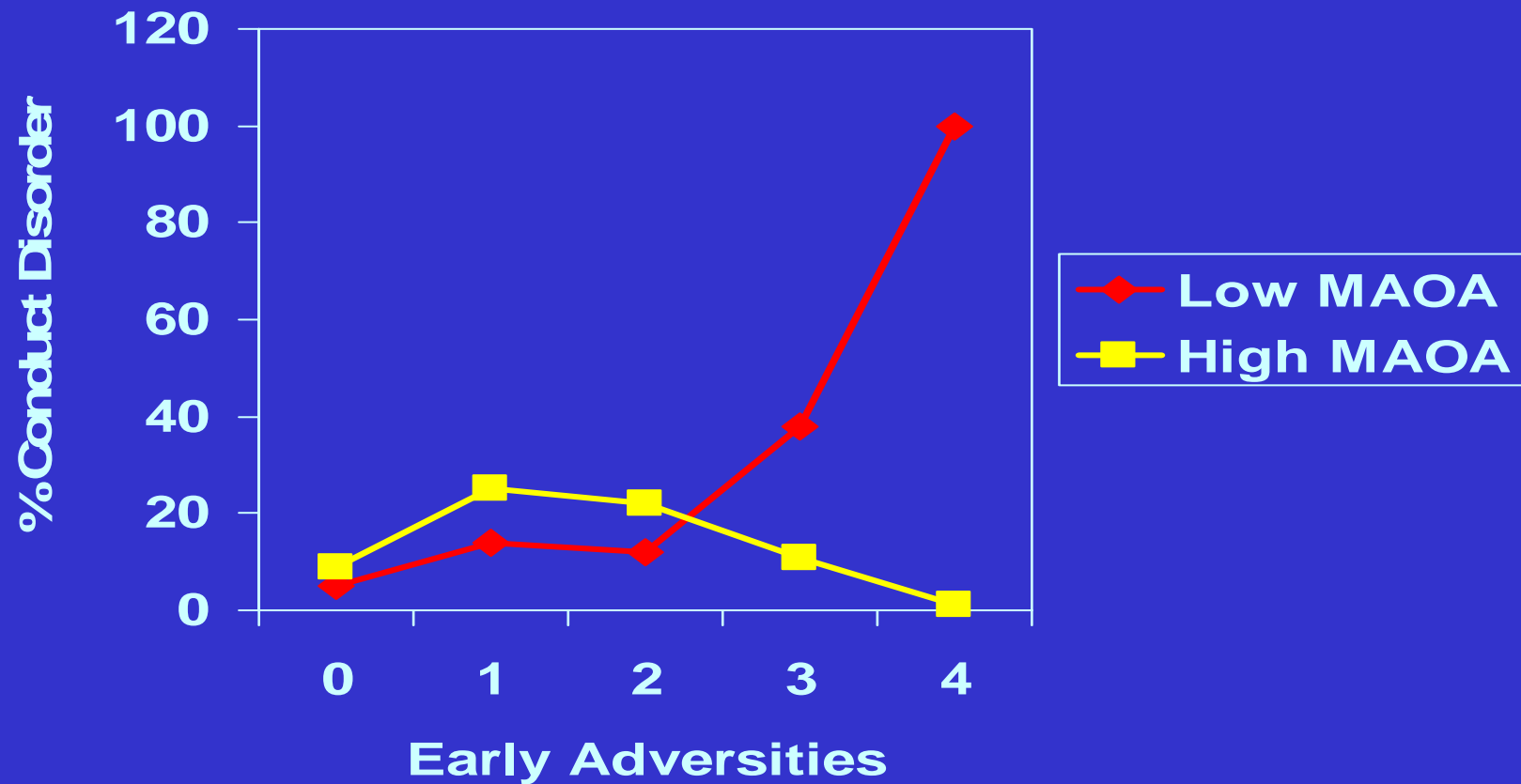
# Genes X Environment:

Caspi et al. (2002). *Science*.

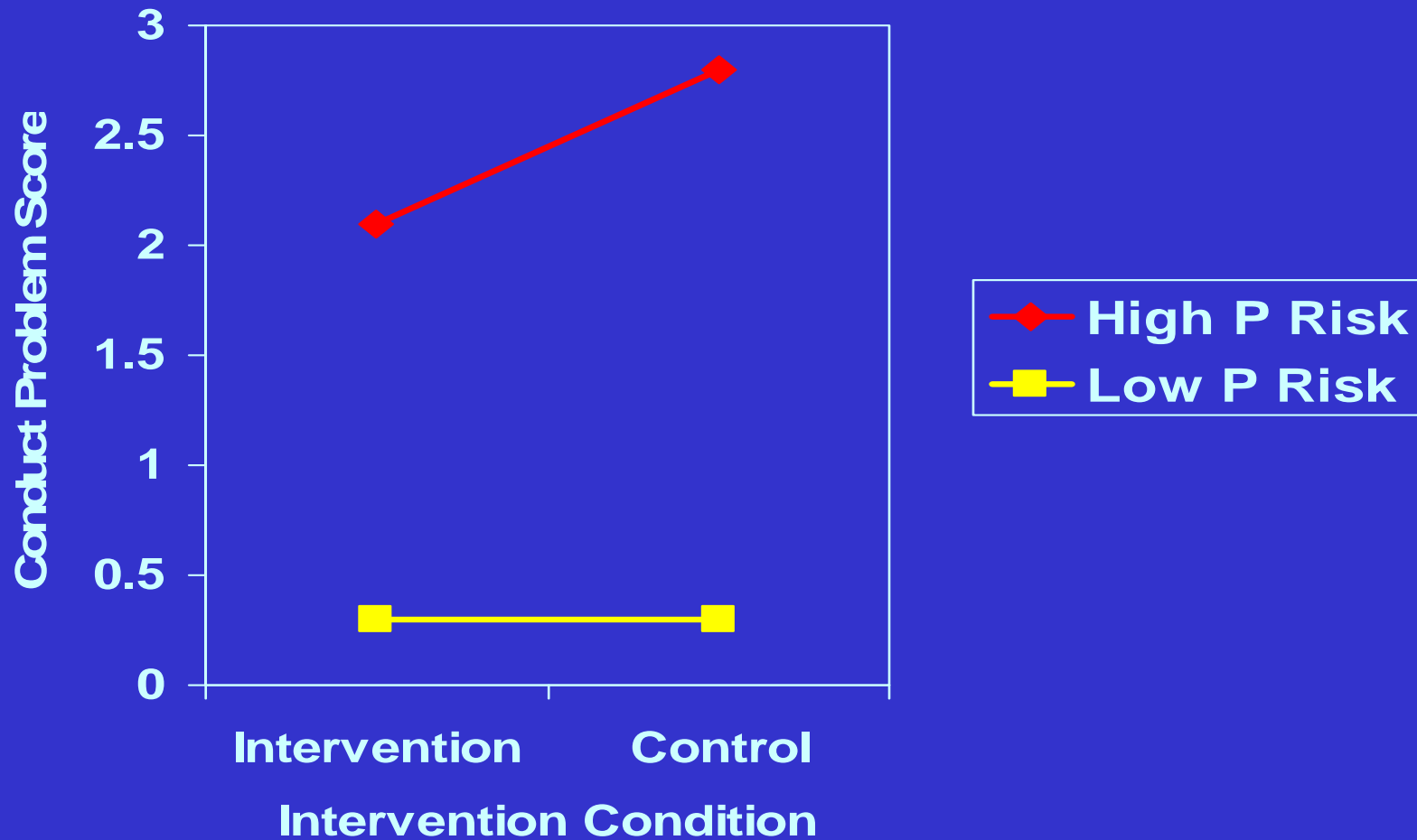


# Genes X Environment:

Foley et al. (2004). *Arch Gen Psychiatry*.



# Person X Intervention: van Lier et al. (2004).



# Meta Analysis

Found 30 studies revealing significant G x E interaction effect

Identified shape of the interaction

Findings:

**All 30 studies revealed similar pattern of larger E effect for high G-risk than low G-risk**

# Theory

- Primary mechanism for aggressive behavior may be a deficient response to social threat.
- Transactional development, because biology and environment are correlated
- Mechanism for individual differences:
  - Faced with a high degree of chronic threat,
  - Some children develop a vulnerability to hyper-react *and* hypo-react

# Theory Analogies

- **“Thin skin”**
  - Emotionally unsteady and “prickly”
  - Must treat with “kid gloves”
  - But, aggressive children also fail to react to punishment
- **“Immuno-deficient response system”**
  - Hyper - responsive to some pathogens
  - Hypo - responsive to others
- **Theory of “response-to-threat deficiency”**

# Implications for Practice

- “It is a widely held belief that psychopathic individuals are extremely difficult to treat, if not immune to treatment” (Salekin, 2002, p. 79)
- More hope for treatment success
- New treatments should focus on environmental threat and individual’s pattern of response to threat

# Implications for Policy: The Status Quo

- "Much of public policy toward the disadvantaged starts from the premise that interventions can make up for genetic or environmental disadvantages, and *that premise is overly optimistic*...Much can and should be done... for those who have the *greatest* potential" (Herrnstein and Murray, 1994, p. 550).
- "The nation is investing far more resources in building and maintaining prisons than in primary prevention programs. Such investments imply an emphasis on reacting to violent offenders after the fact and removing them from the community, rather than preventing children from becoming violent offenders in the first place..." (Elliott, Hamburg, and Williams, 1998, p. 11).
- Some children are destined to become "super predators" for whom public resources and environmental factors will have little effect (DiLulio, 1995).

# Proposal for Public Policy: Government should provide *more* resources for high-risk youth (rather than *less*)

- More resources toward high-biological risk groups:
  - Low birthweight / high birth complications
  - Children of prisoners
  - Maltreated children
- Promote security and protective response to threat:
  - Parental leave policies
  - Home-visiting programs
  - Social-cognitive re-interpretation
  - Emotion regulation enhancement
- Genetic screening (?)