What Do Psychopathic Traits Tell Us about Conduct Problems in Children?

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Importance of Conduct Problems in Children

- One of the most common reasons for referral for mental health services (Frick & Silverthorn, 2001)
- Negative impact on families (Frick, Lahey et al., 1992) and schools (Frost, Jones, & CPPRG, 2004)
- Commonly found in community settings
  - E.g.: 5% to 10% of kids in pediatric care settings meet diagnostic criteria for conduct problems (Farr, 2008)
- High cost to society
  - Over a seven year period, cost $70,000 per child (above and beyond what is normally spent) (Foster, Jones, & CPPRG, 2004)
  - Four years of juvenile offending plus 10 years adult offending estimated to cost $22 to $30 million per child (Cohen, 1998)

How are conduct problems defined?

- DSM-IV categories
  - Oppositional Defiant Disorder – Negative, hostile, argumentative behavior
  - Conduct Disorder
    - Aggression to people and animals
    - Destruction of property
    - Deceitfulness or theft
    - Serious rule violations (e.g., truancy, running away)
  - Both categories also require
    - Patterns of behavior
    - Serious impairment
    - Behaviors that are higher than developmental norms

Developmental Progression of CP

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gave to others, stealing, running away</td>
<td>14</td>
</tr>
<tr>
<td>From home, truancy, breaking and entering,</td>
<td>13</td>
</tr>
<tr>
<td>assault</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Lies, physical fights, bullies others,</td>
<td>9</td>
</tr>
<tr>
<td>Cruel to animals, breaks rules</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Oppositional, defiant, stubborn, noncompliant,</td>
<td>5</td>
</tr>
<tr>
<td>Tempter tantrums</td>
<td>4</td>
</tr>
<tr>
<td>Hyperactive, Impulsive</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Difficult temperament</td>
<td>1</td>
</tr>
</tbody>
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Subtyping conduct problems

- Developmental progression well established at a population level but masks individual differences
- In fact, there is considerable heterogeneity among children with conduct problems
- Reducing this heterogeneity would produce several benefits:
  - Better understanding of correlates and causal pathways
  - Better intervention-child matching
    - Lower cost
    - Better outcomes

Childhood-Onset vs. Adolescent-Limited Conduct Problems

- Childhood onset
  - Emerge before age 10 to 12
  - Associated with with numerous dispositional and contextual (e.g., parent, family, neighborhood) risk factors

- Adolescent onset
  - Emerge after age 10 to 12
  - Associated with contextual risk factors (e.g., peer deviance, individual vs. societal maturity gap)

- Very well supported in lots of research going back decades (Robbins, 1970's; Moffitt, 1993, 2003; Loeber, 1988)
**Factors that Distinguish Child-onset and Adolescent onset groups**

<table>
<thead>
<tr>
<th>Childhood Onset / Life Course Persistent</th>
<th>Adolescent-limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family dysfunction</td>
<td>Rebellious</td>
</tr>
<tr>
<td>Low verbal IQ</td>
<td>Reject social norms / hierarchies</td>
</tr>
<tr>
<td>Ineffective parenting</td>
<td>Affiliate with deviant peers</td>
</tr>
<tr>
<td>Deviant social cognition</td>
<td></td>
</tr>
<tr>
<td>Peer / Social rejection</td>
<td></td>
</tr>
<tr>
<td>Inattention</td>
<td></td>
</tr>
<tr>
<td>Poor impulse controls</td>
<td></td>
</tr>
</tbody>
</table>

- Moffitt, 1993, 2003; Loeber, 1998; many others

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**Evidence for subgroups of CP: Criminal Outcomes (Age 26)**


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**Evidence for subgroups of CP: Violence (Age 32)**

- Odgers et al (2007)

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**Evidence for subgroups of CP: Mental Health (Age 32)**

- Odgers et al (2007)

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**Evidence for subgroups of CP: Physical Health (Age 32)**

- Odgers et al (2007)

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**Do we need further subtypes?**

- Not all child-onset cases have poor outcomes
  - 50% of early-onset cases persist, which means 50% do not (Loeber, 1982; Loeber, 1992)
- Not all adolescent-onset cases desist
  - Can get “trapped” in antisocial lifestyle by getting arrested, dropping out of school, teenage parenthood, etc.
- Likely many different trajectories (Loeber & Stouthamer-Loeber, 1994)
  - Childhood onset that persists or desists
  - Adolescent onset that persists or desists
  - Adult onset that persists of desists

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Moffitt, 1993, 2003; Loeber, 1998; many others
Well established that there are different pathways to conduct problems in youth
- Overall, childhood onset most impaired
- However, considerable variance even within the child-onset cases
- Suggests need to further differentiate child-onset cases of conduct problems

Defining features (Cleckley, 1976; Cooke & Michie, 2001)
- Deficient affect experience
- Arrogant and deceitful interpersonal style
- Irresponsible and impulsive lifestyle
- Numerous studies demonstrate its validity in making important distinctions among antisocial adults (Hare, 2006)
- More serious and violent crimes (Campbell, Porter & Santor, 2004)
- Less responsive to treatment – may get worse rather than better (Harris & Rice, 2006)
- Over-focused on rewards and less responsive to punishment (Newman, 1998)
- Less physiological arousal (Patrick, 2007)
- Reduced empathy /response to fear in others (Patrick, 2001)

Psychopathic murders:
- Almost twice as likely to be instrumental
- Less likely to have impulsive and anger features
- In short, psychopathy more highly associated with “cold blooded” crimes

Importance of Psychopathy in Adult Criminal Behavior
- 125 adults who committed homicide
  - 34 psychopaths, 91 non-psychopaths
  - Compared rates and types of homicides
  - Psychopathic murders:
    - Almost twice as likely to be instrumental
    - Less likely to have impulsive and anger features
    - In short, psychopathy more highly associated with “cold blooded” crimes

Ethical considerations in extending psychopathy to youth
- Risks
  - Often viewed as a stable, untreatable condition
  - Highly negative connotation; stigmatizing
  - The risks can be mitigated
  - Education about developmental and individual differences
  - Careful application of the construct in clinical, educational, judicial contexts
- Benefits
  - May improve understanding of the most seriously impaired children which in turn...
  - May lead to better treatments...
  - May lead to better outcomes for the children and for others in their environment
  - There are also risks of not pursuing this line of work
  - May miss chance to deflect trajectory of the individuals at highest risk for the most seriously antisocial behaviors

Callous-Unemotional Traits in Youth
- Multiple dimensions of psychopathy have been identified in youth
  - generally consistent with adult literature
  - Callous-unemotional (CU) emerges as most important
- Features of CU traits
  - Unconcerned about feelings of others
  - Does not feel bad or guilty
  - Unconcerned about school work
  - Does not keep promises
  - Does not show emotions
  - Does not keep the same friends
- Most often measured using APSD (Hare & Rice, 2006)
  - Good psychometrics: Factor structure, reliability, and stability are supported
  - See APSD Manual and many individual studies
- Has become a proxy for psychopathy in youth
Are high CU traits a "real-life" issue? How often do they actually occur?

- Clinic samples
  - 30% to 50% of children referred for conduct problems (Bonham et al., 2007; Hare et al., 1984)
  - Some evidence CU is normally distributed within clinic-referred children with CP
- Community samples
  - 5% to 10% of elementary age children
  - Example: Survey of 1578 children recruited from 6 elementary schools (Marsh & Hastings, 2007)
  - 7.8% had elevated CU scores according to parents, teachers
  - About 1/3 of children with ODD and 2/3 of children with CD had elevated CU scores
- Most clinicians believe they have treated children with high CU traits (Salekin et al., 2001)

Do CU traits really matter?

- Many studies over the past decade have compared conduct problem children with CU traits (CP/CU) to conduct problem children without CU traits (CP-only)
- Differences have emerged across a number of different domains

Do CU traits really matter? (cont.)

- Antisocial Behavior
  - More severe, varied and frequent (Blair et al., 2001; Pe:pillow et al., 2008; Blair et al., 2008)
  - More delinquency / recidivism (Christian et al., 1997; Viding et al., 2010)
  - Independently predicts antisocial behavior in adolescence (Bakker et al. 2002; Lynam, 1987)
- Genetic / Family Studies
  - 2-3 times greater heritability of antisocial behavior (Loeber et al., 2001)
  - APSD and Arrest Records 3-6 times higher in CP/CU parents (Frick et al., 1994; Christian et al., 1997)

Do CU traits really matter? (Cont.)

- Social Cognition
  - No hostile attribution bias (unlike CP-only) (Frick et al., 2002)
  - Less positive, more aggressive solutions to social problems (Pe:pple et al., 2003; Woodworth et al., 2007)
- Parenting
  - Lower association with ineffective parenting (Blair et al., 2001; Pe:pillow et al., 2007; Marsh & Hastings, 2007)
  - Corporal punishment in childhood associated with psychopathy in adulthood only for children with CP-only at baseline (Lynam et al., 2004)

Do CU traits really matter? (Cont.)

- Moral Development
  - Less empathy for victims (Salekin et al., 2001; Hindolo et al., 2000)
  - Less able to distinguish moral violations from conventional violations (Blair, 1987, 2003; Fisher & Blair, 1996)
- Emotional Processing
  - Less accurate at identifying fear, sadness (Blair et al., 2000, 2002; Pe:pillow et al., 2003; Marsh & Hastings, 2007)
  - Less physiological, behavioral response to distress and negative emotional cues (Frick et al., 2002; Christian et al., 2006; Lynam et al., 2001; Marsh & Hastings, 2007; Pe:pillow et al., 2003)

Do CU traits really matter? (Cont.)

- Biological differences
  - Less amygdala activation when processing fear (Salekin et al., 2001; Barry et al., 2003)
  - Higher ventromedial prefrontal cortex activation during a reward/punishment reversal task.
  - Lower salivary cortisol but no differences on testosterone (Lynam et al., 2006)
- Cognitive differences
  - Less likely to change behavior in response to punishment (Barry et al., 2003; D'Souza et al., 2000; O'Hare et al., 2000)
  - No differences on IQ (but CP-only lower) (Christian et al., 1997; Lynam et al., 2004)
Do CU Traits really matter? Social Problem Solving Example

- Control
- CU-only
- CP-only
- CY/CU

Waschbusch, Walsh et al (2007)

What about treatment differences?

- Adult psychopathy recalcitrant to treatment (Harris & Rice, 2006)
  - May get worse in response to some types of treatment
  - Lots of theories of treatment effects in kids with CU
  - May be effective b/c canalizing factors have not occurred (e.g., school drop out, drug use, jail, etc.)
  - Medication may reduce impulsive aggression but increase non-impulsive aggression
  - Punishment may be less effective or even detrimental
  - Suggests that standard treatments for conduct problems may be least effective for those most prone to serious, frequent, and violent antisocial behaviors

Barbaree, 2005; Rice, Harris, & Cormier, 1992

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Wong & Hare, 2005

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Compared frequency counts of behavior

- Boys & girls ages 7-12 yrs with ADHD/CP
  - 19 with ADHD/CP-only
  - 18 with ADHD/CP-CU

Behavioral and Medication Treatment

- Intensive behavior therapy delivered in an summer treatment camp
- Medication (methylphenidate / Ritalin) examined within-subjects using randomized placebo design
  - None (placebo) vs. Low Dose (.3 mg/kg) vs. High dose (.6 mg/kg)
- Bmod-only vs. Bmod-Low vs. Bmod-High


Treatment of children with CP/CU: Response to bmod w/wo meds

- CU group significantly worse in behavior therapy only condition on measures of antisocial behavior
  - Noncompliance
  - Conduct problems (combination of lying, stealing, destruction of property, aggression)
  - Rule violations
  - CU not just globally impaired; impaired in specific areas
  - Differences diminished when medication added


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**Frequency of Conduct Problems During Treatment**

Are results simply a function of severity of CP?

**Behavioral and Stimulant Medication Treatments**
- Fully crossed
- Delivered in a summer treatment camp
- Bmod (none vs. low vs. high) x Med (None vs. low vs. Med vs. High)

Waschbusch, Willoughby et al (‘in prep)

**Behavior therapy and medication work**
- BT x Group interactions, not Med x Group
- Groups differed in response to BT but not med
- Consistent with Waschbusch et al 2007

Waschbusch, Willoughby et al (‘in prep)
Treatment of children with CP/CU: Response to bmod and med fully crossed

- CP/CU more negative in no treatment
- CP-only and CP/CU similar improvement between no treatment and low bmod treatment
- CP-CU group differ between low and high bmod
  - CP-only improve; CP/CU do not (and may get worse)
- What might account for this pattern?
  - One difference between low and high bmod was addition of a weekly punisher (chores) for negative behavior
  - Consistent with lab task data showing CU associated with less responsiveness to punishment

Waschbusch, Willoughby et al (in prep)

Treatment of children with CP/CU: Response to Time Out study

- If CP/CU do differ in response to bmod, perhaps it is because of response to punishment such as Time Out (Deeds & Salmon, 2002; Frick and Marlow, 2001)
- Secondary analysis of data from study of different types of Time Out (Fetino et al., 2008)
- Boys & Girls Ages 6 to 12 with ADHD/CP
  - 23 children with ADHD/CP-only
  - 10 Children with ADHD/CP-CU
- Four Time Out conditions
  - No time out
  - Short time out (5 minutes)
  - Long time out (15 min)
  - Contingent time out


Treatment of children with CP/CU: Response to bmod and med fully crossed

- CP/CU more negative than CP-only in every condition, regardless of time-out
- Larger study showed
  - Time out more effective than no time out
  - Doesn’t matter what type of time out
- This study suggests
  - CP/CU may do worse for short time outs
  - Need time to “cool down”?
  - CP/CU may do best in contingent time out
  - Improve behavior when given some situational control?

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Conclusions

- There is now a large and consistent body of evidence showing CP/CU and CP-only differ
- Limited existing research comparing tx response suggests that they may differ in response to behavior therapy
  - Small sample sizes suggest need for caution in interpreting results
- Implications
  - Past research on behavior therapy for children may underestimate true effects of BT for children with CP-only
  - New treatment approaches may be needed for children with CP/CU
  - Emphasize reward, de-emphasize punishment
  - Consistent with experimental research on children and adults
- Differences may be eliminated by stimulant medication. If so, why?
  - Is med improving non-impulsively driven antisocial behaviors?
  - Is impulsivity driving antisocial behaviors for both group?
  - Is medication acting through a different pathway in children with CU?
Thank You

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