Developing a Theory of Effective Juvenile Delinquency Programming Through an Examination of Change-levers Rather Than Program Types

Preliminary evidence from a large juvenile delinquency meta-analysis

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Two Basic Insights

- Delinquency treatment programs (generally) do not target delinquency directly
  - Almost always try to increase or decrease something else
- The number of unique programs to address juvenile delinquency is endless
  - The theoretically meaningful list of proximal outcomes is limited
  - We can conceptualize these as “change-levers”
311 unique programs focused on juveniles
62 are listed as effective
Most have few studies evaluating their effectiveness
Evidence-base is large but spread thinly across programs
Programs for Juveniles Listed on CrimeSolutions.gov

<table>
<thead>
<tr>
<th>Rating</th>
<th>No. of Programs</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>62</td>
<td>22</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>Promising</td>
<td>185</td>
<td>161</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Ineffective</td>
<td>64</td>
<td>51</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>311</td>
<td>234</td>
<td>50</td>
<td>27</td>
</tr>
</tbody>
</table>

The table above shows the number of studies for different ratings of programs for juveniles listed on CrimeSolutions.gov. The ratings are 'Effective', 'Promising', and 'Ineffective'. The numbers indicate the distribution of studies into the categories '1', '2', and '3'.
Challenges of Branded Programs

- Generally few evaluation studies
- Few are effective in natural settings when brought to scale
- Failure attributed to poor implementation
- Making local adaptations is risky
Frameworks for Thinking about Effective Programs

Black Box

Branded Programs

Generic Programs

Generic Treatment Principles and Practices

Change-levers

Inside the Box
Treatment Principles and Practices and Change-levers

- Risk-Needs-Responsivity (RNR) model (Andrews, Bonta and colleagues)
- Standardized Program Evaluation Protocol (SPEP) (Lipsey)
- Combining principles/practices with evidence on change-levers is potentially powerful
- Change-levers focus on mediational effects
  - Effect of program on delinquency can be explained by intermediate outcome
  - Treatment effects on a change-lever may produce change on delinquency
Visualization of a change-lever treatment program delinquency

treatment program → change-lever → delinquency

change-lever → treatment program

change-lever → delinquency
Methods

Analyses used data from Mark Lipsey’s large meta-analysis of juvenile delinquency programs.

- Based on a subset of 548 independent study samples of 361 primary research reports.
- Coded both delinquency and non-delinquency outcomes.
- Analysis examines whether a program’s ability to change a non-delinquency outcome is related to its ability to change a delinquency outcome.
Study Eligibility Criteria

259 independent studies met the following eligibility criteria and were included in the analyses presented today:

▶ The research was conducted in an English-speaking country and reported in English.
▶ The interventions were designed to reduce delinquency.
▶ The juveniles were between 12 and 21 years of age and were delinquent or exhibiting anti-social behavior.
▶ The program’s effect was measured on at least one delinquency outcome variable (e.g., rearrest, reconviction, return to court supervision, and so forth).
▶ The outcomes of the target intervention program were directly compared to those of a control group of similar juveniles who did not receive the intervention.
▶ For the purposes of this talk, at least one non-delinquency outcome effect size was coded.
Standardized mean difference effect sizes were used with positive values reflecting positive change.

- For non-delinquency effect sizes, we selected the first post-treatment measurement time-point for each outcome.
- For delinquency effect sizes, preference was given to the most general measure of offending taken, ideally measured as some point post-treatment (e.g., 6-months).
- Non-delinquency effect sizes were categorized into one of 45 measurement constructs.
Analyses

- Used random-effects meta-regression to examine the relationship between non-delinquency and delinquency effect sizes by construct
- Regression coefficients reflect the proportion improvement in delinquency relative to improvement on the non-delinquency measure
Scatterplot Showing Relationship Between Delinquency and Family Functioning

Slope = 0.61
No. of Studies = 37
Scatterplot Showing Relationship Between Delinquency and Employment (getting/keeping job) Effect Sizes

Slope = 0.18
No. of Studies = 38
Weighted Correlation Between Delinquency Effect Size and Non-delinquency Effect Size (random effects models)

<table>
<thead>
<tr>
<th>Non-Delinquency Construct</th>
<th>Reg. Coef.</th>
<th>95% CI</th>
<th>No. of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Problems</td>
<td>0.86</td>
<td>0.44</td>
<td>1.28</td>
</tr>
<tr>
<td>Attitudes Regarding Delinquency</td>
<td>0.43</td>
<td>0.23</td>
<td>0.64</td>
</tr>
<tr>
<td>Personality</td>
<td>0.39</td>
<td>0.17</td>
<td>0.62</td>
</tr>
<tr>
<td>Self-Esteem, Self-Concept</td>
<td>0.35</td>
<td>0.14</td>
<td>0.55</td>
</tr>
<tr>
<td>Mood &amp; Anxiety</td>
<td>0.30</td>
<td>0.09</td>
<td>0.51</td>
</tr>
<tr>
<td>Interpersonal adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Functioning</td>
<td>0.61</td>
<td>0.32</td>
<td>0.91</td>
</tr>
<tr>
<td>Attitudes about interpersonal issues</td>
<td>0.45</td>
<td>0.20</td>
<td>0.70</td>
</tr>
<tr>
<td>Social Skills</td>
<td>0.29</td>
<td>0.01</td>
<td>0.57</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>0.09</td>
<td>-0.16</td>
<td>0.33</td>
</tr>
</tbody>
</table>
## Weighted Correlation Between Delinquency Effect Size and Non-delinquency Effect Size (random effects models)

<table>
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<th>95% CI</th>
<th>No. of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>School Adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dropping out of school</td>
<td>0.57</td>
<td>0.28</td>
<td>0.86</td>
</tr>
<tr>
<td>Attendance, Tardiness</td>
<td>0.38</td>
<td>0.23</td>
<td>0.53</td>
</tr>
<tr>
<td>Sch. Adj. Noncriminal/Non-antisocial</td>
<td>0.34</td>
<td>0.05</td>
<td>0.63</td>
</tr>
<tr>
<td>Attitudes Regarding School</td>
<td>0.29</td>
<td>0.07</td>
<td>0.51</td>
</tr>
<tr>
<td>Academic Improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Achievement</td>
<td>0.24</td>
<td>-0.12</td>
<td>0.61</td>
</tr>
<tr>
<td>School Grades</td>
<td>0.08</td>
<td>-0.11</td>
<td>0.27</td>
</tr>
<tr>
<td>Vocational Adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment (get/keep job)</td>
<td>0.18</td>
<td>-0.08</td>
<td>0.45</td>
</tr>
<tr>
<td>Attitudes Toward Work</td>
<td>-0.46</td>
<td>-0.98</td>
<td>0.05</td>
</tr>
</tbody>
</table>
Change-levers with Largest Effects on Delinquency

- Behavioral problems
- Family functioning
- Dropping out of school
- Attitudes regarding delinquency
- Attitudes about interpersonal issues
Change-levers with Smallest Effects on Delinquency

- Peer relations
- School achievement
- School grades
- Vocation/work related
Blueprints for Violence Prevention identifies 8 model programs with impacts on delinquency:

- 5 focus on family functioning in some fashion
- 2 focus on social-emotional learning
- 1 focuses on life skills training

This is fairly consistent with what we would expect based on the change-lever analysis.
Benefits of a Change-lever Framework

- Facilitates theory development related to juvenile justice programming by identifying potential causal pathways for effective programs
- Facilitates implementation: Provides a clear focus for what immediate change a program is trying to bring about
- Foundation of a predictive model for assessing the promise of new programs that have yet to be evaluated
Most program theories have the following basic components:

1. Set of program activities (active ingredients)
2. Expected immediate changes in the individual, family, peer-group, school, etc.
3. Expected long-term changes
4. Theoretical rationale that explains how these interrelate

Assessing causal mechanisms (change-levers) critical to assessing program theories

Kazdin (2007) argues that knowledge regarding the causal mechanisms (change-levers) can facilitate implementation in real-world settings
Limitations and Next Steps

- Ecological fallacy: in these data we don’t know if those who improved on the change-lever are the same youth who improved on delinquency
  - Can be addressed with primary data
    - Need to better exploit data in existing evaluations
  - Likely to be many effective change-levers making it more difficult to establish that any change-lever alone is truly causal

- Next steps
  - Code non-delinquency outcomes for more studies
  - Examine these relationships for prevention programs, adult corrections, etc.
  - Examine these mediators with individual level data
Thank you!

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