Problem Behavior Typologies and Change Across Adolescence

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Moffit and Caspi (2001) distinguish between anti-social behavior which develops in early childhood and is life-course persistent and what they term ‘adolescent-limited’ anti-social behaviors.

Loeber and Stouthamer-Loeber (1998) have delineated three different pathways for the development of problem behaviors and delinquency.

Jessor (Jessor, Donovan, & Costa, 1991; Donovan et al., 1988) argues that such behaviors as delinquency, substance use and sexual behaviors cluster together within individuals.
Research Questions

- Do students exhibit differing typologies of problem behavior profiles?
- Do demographic factors distinguish group membership?
- What patterns of stability and change in problem behavior profiles develop across adolescence?
- What intraindividual stability and change in profile membership develops across time?
Method

- Subjects (n = 1482) were drawn from the Maryland Study of Adolescent Development in Context (MADIC).
  - 66.1% African-American
  - 48.9% female
- Problem behaviors were assessed using indicators of risky behavior, delinquent behavior (e.g. vandalism and theft), substance use, aggressive behaviors and school problems at 7th, 8th and 11th grade.
  - Problem Behaviors were converted to a semi-absolute scale (0 = None, 1 = Mild, 2 = Moderate, 3 = Severe).
  - The problem behavior variables were aggregated into one of six categories based on context and type of behavior.
- Ten typologies of problem behavior exhibition were derived using the Sleipner cluster analysis program at 7th, 8th and 11th grade.
  - Stability and Change was assessed between time points.
Measures

20 Problem Behaviors were used to differentiate different typologies of problem behavior status at each wave.

- Alcohol Behavior
- Marijuana Behavior
- Cigarette Behavior
- Drugs to School Behavior
- Class Skipping Behavior
- School Skipping Behavior
- Cheating Behavior
- Risk Behavior
- Hitting Behavior
- Lying Behavior
- Pill Taking Behavior
- Crack Behavior
- Cocaine Behavior
- Heroin Behavior
- Sent to Office Behavior
- Suspended Behavior
- Stealing Behavior
- Gang Behavior
- Damage Property Behavior
- Stealing Car Behavior
**Measures**

**TABLE 1**

*Descriptive Statistics from MADIC Wave 1*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>sd</th>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>sd</th>
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</thead>
<tbody>
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<td>.17</td>
<td>.56</td>
<td>Problem Pill Behavior</td>
<td>1230</td>
<td>.10</td>
<td>.51</td>
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<tr>
<td>Problem Marijuana Behavior</td>
<td>781</td>
<td>.04</td>
<td>.34</td>
<td>Problem Crack Behavior</td>
<td>1225</td>
<td>.02</td>
<td>.23</td>
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<tr>
<td>Problem Cigarette Behavior</td>
<td>1220</td>
<td>.09</td>
<td>.43</td>
<td>Problem Cocaine Behavior</td>
<td>1224</td>
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<td>.26</td>
</tr>
<tr>
<td>Problem Drugs to School Behavior</td>
<td>1220</td>
<td>.08</td>
<td>.44</td>
<td>Problem Heroin Behavior</td>
<td>1225</td>
<td>.01</td>
<td>.21</td>
</tr>
<tr>
<td>Problem Class Skipping Behavior</td>
<td>1230</td>
<td>.20</td>
<td>.57</td>
<td>Problem Sent Office Behavior</td>
<td>1230</td>
<td>.64</td>
<td>.91</td>
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<tr>
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<td>1205</td>
<td>.11</td>
<td>.40</td>
<td>Problem Suspended or Expelled Behavior</td>
<td>1205</td>
<td>.11</td>
<td>.40</td>
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<tr>
<td>Problem Cheating Behavior</td>
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<td>.73</td>
<td>Problem Stealing Behavior</td>
<td>1230</td>
<td>.34</td>
<td>.74</td>
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<tr>
<td>Problem Risk Behavior</td>
<td>1230</td>
<td>.70</td>
<td>1.08</td>
<td>Problem Gang Behavior</td>
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<td>.75</td>
<td>1.11</td>
<td>Problem Damage Behavior</td>
<td>1218</td>
<td>.32</td>
<td>.70</td>
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<tr>
<td>Problem Lying Behavior</td>
<td>1230</td>
<td>.46</td>
<td>.92</td>
<td>Problem Stealing Car Behavior</td>
<td>1219</td>
<td>.09</td>
<td>.48</td>
</tr>
</tbody>
</table>

*Note: Problems were on a 0 to 3 semi-absolute scale (0 = no problems in the domain, 3 = severe problems in the domain).*
Statistical Analysis

- Ward’s Method (with squared Euclidian distance) was used to perform cluster analysis on the 6 problem behavior categories to identify subgroups.
  - Clusters were validated using parent reports of mental health functioning.
- Tukey’s Honestly Significant Differences (HSD) comparison was used to determine mean difference between groups on demographic measures.
- Crosstabulations of 7th to 8th grade and 8th to 11th grade were performed to assess stability and change between groups over time.
7th Grade Problem Behavior Clusters

- No Problems
- School Authority
- School Discipline
- Minor Delinquency
- Minor Delinquency & School Authority
- Minor Delinquency & School Discipline
- Minor Delinquency & Serious Delinquency
- Major Delinquency
- Hard Drug Use
- Multiple Problems
- Cigarette, Alcohol and Marijuana Use
- Hard Drug Use
- School Authority
- School Discipline
- Minor Delinquency
- Serious Delinquency

Graph showing the frequency of various problem behaviors among 7th grade students, including school authority, school discipline, minor delinquency, serious delinquency, and hard drug use.
A significant relation exists between cluster membership and gender, \( X^2 = 117.524; \) df=9; \( p = .000 \), race, \( X^2 = 74.514; \) df=9; \( p = .000 \), age, \( F(9, 1213) = 4.485, p = .000 \), highest education, \( F(9, 1214) = 4.339, p = .000 \), highest occupation, \( F(9, 1163) = 2.265, p = .016 \), income, \( X^2 = 22.918, p = .006 \) and intact family status, \( F(6, 1067) = 6.251, p = .000 \).
Parent Perceptions of Youth - 7th Grade

- Antisocial Behavior - Multiple Problems and MP without Drugs were higher than other groups (Tukey’s HSD = < .05).
- Distracted Behavior – School Authority, Minor Delinquency and School Authority Multiple Problems and MP without Drugs were higher than other groups (Tukey’s HSD = < .05).
- Depression – Hard Drug Use, Multiple Problems and MP without Drugs were higher than other groups (Tukey’s HSD = < .05).
- Anger – Minor Delinquency and School Discipline, Multiple Problems, MP without Drugs and Hard Drugs were higher than other groups (Tukey’s HSD = < .05).
Results of Cluster Validation

- Groups differed on a number of demographic variables.
  - Girls were overrepresented in No Problems, Minor Delinquency and Hard Drug Use but underrepresented in School Authority, Minor Delinquency and School Authority, Delinquent, Multiple Problems and MP without Drug Use.
  - African Americans were underrepresented in No Problems, Minor Delinquency, Hard Drug and Multiple Problems Groups but overrepresented in School Authority, Minor Delinquency and School Authority, Serious Delinquency and MP without Drugs.

- Groups differed on parent perception of mental health.
  - Multiple problems groups were seen by parents as being significantly more antisocial, distracted, depressed and angry.
  - School problems groups were seen by parents as being significantly more distracted.
  - Hard drug users were seen as significantly more depressed.
11th Grade Problem Behavior Clusters

- School Discipline
- Minor Delinquency
- School Problems
- Cigarette, Alcohol and Marijuana Use
- Hard Drug Use
- School Authority
- Drug Use & Delinquency
- Multiple Problems
- Serious Delinquency
- No Problems
Table 1: Counts and Adjusted Residuals for Movement from Seventh to Eighth Grade

<table>
<thead>
<tr>
<th>Eighth Grade Problem Behavior Groups</th>
<th>No Problems</th>
<th>School Authority</th>
<th>School Discipline</th>
<th>Minor Delinquency</th>
<th>Minor Delinquency &amp; School Discipline</th>
<th>Delinquency &amp; School</th>
<th>Major Delinquency</th>
<th>Hard Drug Use</th>
<th>Multiple Problems w/o Drugs</th>
<th>Multiple Problems</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Problems</td>
<td>216</td>
<td>150</td>
<td>175</td>
<td>136</td>
<td>90</td>
<td>84</td>
<td>101</td>
<td>37</td>
<td>93</td>
<td>55</td>
<td>1137</td>
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<td>School Authority</td>
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<td>-1.1</td>
<td>-1.1</td>
<td>2.7</td>
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<td>-1.6</td>
<td>-3.4</td>
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<td>Minor Delinquency &amp; School Authority</td>
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<td>-0.8</td>
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<td>1.2</td>
<td>-1.2</td>
<td>0.5</td>
<td>-0.7</td>
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<td>10</td>
<td>6</td>
<td>16</td>
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<td>2</td>
<td>13</td>
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<td>8</td>
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<td>72</td>
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<td>Minor Delinquency &amp; School Discipline</td>
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<td>96</td>
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<td>Hard Drug Use</td>
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<td>1.5</td>
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<td>1.8</td>
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<tr>
<td>Multiple Problems W/O Drugs</td>
<td>116</td>
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<td>0.1</td>
<td>-3.5</td>
<td>-2.1</td>
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<td>-8</td>
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<td>-1</td>
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<td>Total</td>
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<td>203</td>
<td>138</td>
<td>167</td>
<td>127</td>
<td>85</td>
<td>68</td>
<td>93</td>
<td>28</td>
<td>79</td>
<td>1036</td>
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</table>

Note: Cells shaded in **purple** represent **stability** while cells shaded in **green** represent **change**.
## Table 2: Counts and Adjusted Residuals for Movement from Eighth to Eleventh Grade

<table>
<thead>
<tr>
<th>Eleventh Grade Problem Behavior Groups</th>
<th>N</th>
<th>350</th>
<th>108</th>
<th>150</th>
<th>69</th>
<th>54</th>
<th>57</th>
<th>55</th>
<th>38</th>
<th>97</th>
<th>75</th>
<th>1053</th>
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<td>4</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>173</td>
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<tr>
<td>School Authority</td>
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<td>1.9</td>
<td>1.5</td>
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<td>7</td>
<td>4</td>
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<td>107</td>
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<tr>
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<td>3.0</td>
<td>-2</td>
<td>-1.4</td>
<td>-1.7</td>
<td>-8</td>
<td>-1.4</td>
<td>-2.2</td>
<td>-1.7</td>
<td>-1.9</td>
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<td>Minor Delinquency</td>
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<td>-1.7</td>
<td>-1</td>
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<td>6</td>
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<td>1</td>
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<td>5</td>
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<td>2</td>
<td>-1.3</td>
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<td>Delinquency &amp; School</td>
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<td>3</td>
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<td>1</td>
</tr>
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<td>1.6</td>
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<td>3</td>
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<tr>
<td>Hard Drug Use</td>
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<td>Multiple Problems W/O Drugs</td>
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<td>841</td>
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</table>

Note: Cells shaded in **purple** represent stability while cells shaded in **green** represent change.
Results of Stability and Change Across Time

- Stability existed between the waves.
  - Minor and no problems groups were highly stable between 7th and 8th grade.
  - Minor and no problems groups were highly stable between 8th and 11th grade.
  - Multiple problems groups were also highly stable between 7th and 8th grade.

- Change in problem behavior exhibition existed between the waves.
  - Between 7th and 8th grade there was significant change between the different delinquency groups.
  - There was greater change within the moderate and high problem behavior groups between 8th and 11th grade.
Conclusions

- Adolescents can be differentiated based on the types of problem behaviors in which they participate.
- These problem behavior typologies are validated by parent report of youth mental health.
- These differences are meaningful in describing types of adolescents which should inform intervention and prevention.
- There is stability in many of the problem behavior types with the greatest stability in no to minor problem behaviors and high levels of problem behaviors.
Selected Works Cited


Acknowledgements

This research is supported in part by NICHD Grant #R01 HD33437 awarded to Jacquelynne S. Eccles and Arnold J. Sameroff and in part by a grant from W. T. Grant awarded to Jacquelynne S. Eccles. The original data collection was supported by funding from the MacArthur Research Network on Successful Adolescent Development in High Risk Settings, chaired by Richard Jessor.

We gratefully acknowledge the contributions of the following people to this project (listed alphabetically): Elaine Belansky, Celina Chatman, Diane Early, Jacque Eccles, Kari Fraser, Katie Jodl, Ariel Kalil, Linda Kuhn, Karen Macarthy, Oksana Malanchuk, Steve Peck, Rob Roeser, Arnold Sameroff, Sherri Steele, Cynthia Winston, and Carol Wong.

For more information about this study or to print a copy of the paper go to: http://www.rcgd.isr.umich.edu/garp