Abstract
With US arrest rates for violent crime rising among adolescent girls, there is an increased sense of urgency about the need to better understand girls’ delinquency (Tracy et al. 2009; Wolf and Kempf-Lerond 2009). Recent thinking about girls involved in the juvenile justice system has focused on the role of trauma and posttraumatic stress disorder (PTSD) trauma as precipitants of delinquency that are particularly salient for girls (e.g., Achen 1998; Bloom et al. 2002; Chamberlain and Moore 2002; Graziano and Wagner 2011; Kerig 2011, in press).
With US arrest rates for violent crime rising among adolescent girls, there is an increased sense of urgency about the need to better understand girls’ delinquency (Tracy et al. 2009; Wolf and Kempf-Leonard 2009). Recent thinking about girls involved in the juvenile justice system has focused on the role of trauma and post-traumatic stress disorder (PTSD) trauma as precipitants of delinquency that are particularly salient for girls (e.g., Acoca 1998; Bloom et al. 2002; Chamberlain and Moore 2002; Graziano and Wagner 2011; Kerig 2011, in press). In this chapter, we set out to evaluate the state of the science in regard to the relationship between trauma and delinquency. Along the way, we encountered many challenges – definitional, methodological, and conceptual – some expected findings, and some unexpected ones. To organize our review, we set for ourselves the task of addressing three questions: Why might PTSD be implicated specifically in girls’ delinquency; What is the evidence for a differential role of PTSD in girls’ delinquency; and What mechanisms might account for the relationship between PTSD and delinquency among girls? In keeping with the theme of this volume, we defined delinquency as involvement in the legal system, and thus focused our literature review on those “deep end” (Cauffman 2008) youth found in detention settings and juvenile justice samples.
Why Might PTSD Be Particularly Important for Understanding Girls’ Delinquency?

One reason to hypothesize that PTSD is differentially related to girls’ delinquency is that PTSD, in general, is a gender-linked disorder. Across samples and ages, a well-replicated finding is that women and girls are more likely to be diagnosed with PTSD than men and boys, even in the context of exposure to the same traumatic event (Tolin and Foa 2006). However, it is difficult to determine whether this gender difference reflects an underlying vulnerability to the development of PTSD among females, or whether this result is attributable to a gender-related response bias; for example, males may be less willing than females to endorse symptoms of distress and anxiety due to their incompatibility with the masculine gender role (Saxe and Wolfe 1999). Further research will be needed to resolve the question of whether gender disparities in PTSD are a result of true differences in symptoms levels versus under-reporting by males.

Another reason PTSD may be of particular concern in the study of girls’ delinquency is that girls may be exposed to more, or to different kinds of, trauma than boys. For example, delinquent girls may be more likely than boys to experience interpersonal traumas, which are those involving direct victimization in the context of a personal relationship (e.g., Cauffman et al. 1998; Herrera and McCloskey 2003; Kerig et al. 2009, in press-a). Interpersonal traumas are differentially associated with the development of PTSD (Ozer et al. 2003), perhaps because of the element of betrayal involved when a relationship that should be a source of safety instead becomes a source of threat (Freyd 1997). In addition, some research suggests that girls are more strongly affected by interpersonal stressors, especially those that occur in the context of the family (Lewis et al. 1991). The family lives of juvenile justice-involved girls have been described as even more rife with conflict, instability, and parent psychopathology than those of boys (Bloom et al. 2002; Chesney-Lind and Sheldon 1998; Dixon et al. 2004; Lederman et al. 2004). For example, delinquent girls, in Chamberlain and Moore’s (2002) sample, were four times more likely than boys to have been removed from their homes due to abuse, neglect, or abandonment. Troubled mother–daughter relationships, in particular, have been implicated in girls’ delinquency (Belknap and Holsinger 2006; Henggeler et al. 1987; Kerpelman and Smith Adcock 2005; Lawrence-Wills 2004). Indeed, some have speculated that the rise in female delinquency is an artifact of harsh, rejecting parents involving an all-too willing legal system in increasing the punishments for girls who engage in even the mildest infractions (Aeoecia 1998; Feld 2009; Chesney-Lind and Belknap 2004).

A third reason to suspect a differential link between trauma and delinquency for girls relates to gender roles. For example, Zahn-Waxler (1993) has argued that girls who engage in aggressive behavior are demonstrating more significant violations of gender stereotyping than boys, for whom risk-taking and anti-authoritarian behavior are merely exaggerations of the socially accepted masculine role. Therefore, girls who act out in overt and violent ways might be more disturbed than their male counterparts and their behavior may be driven more by emotional distress – such as that...
borne of trauma. The idea that girls’ delinquency is an enactment of psychological distress is suggested by others in the literature, who point to the fact that girls’ arrests often are a matter of status offenses – such as running away, substance abuse, and risky sexual activity – or of “mutually combative” exchanges between themselves and their parents (Chesney-Lind and Belknap 2004), behaviors which arise as a function of the very abuse they experience at home (Acoca 1998; Anda et al. 2006; Hoyt and Scherer 1998; Widom and Kuhns 1996; Wright et al. 2004). As Dembo and colleagues (1995) suggest, “girls’ problem behavior commonly relates to an abusive and traumatizing home life, whereas boys’ law violating behavior reflects their involvement in a delinquent life style” (p. 21).

**Is PTSD More Prevalent Among Juvenile Justice-Involved Girls?**

Our review of the literature yielded 14 studies that have assessed prevalence rates of PTSD among youth involved in the juvenile justice system. Although we searched specifically for studies of detained youth, we also included two studies of large, representative community samples that provided measures of both PTSD and delinquency. As shown in the summary provided in Table 8.1, prevalence rates for a diagnosis of Full PTSD range from a low of 5% to a high of 52% for girls and from a low of 2.2% to a high of 32% for boys. Among studies of girls, two found prevalence rates lower than 10%, five found prevalence rates between 10 and 20%, and five found prevalence rates between 30 and 52%.

Among the 11 studies, we located that included both genders, three found no differences in the prevalence rates for boys and girls. Abram and colleagues (2004) administered a structured diagnostic interview to a sample of 898 detainees in a large juvenile temporary detention center and found that a slightly higher percentage of girls met criteria for PTSD than boys (approximately 15 and 11%, respectively), a difference that was not statistically significant. Similarly, McCabe and colleagues (2002) utilized the same diagnostic interview with a sample of 625 adjudicated adolescents. Although girls met criteria for a diagnosis of PTSD at rates three times as high as for boys (7.1 and 2.2%, respectively), this difference also failed to reach statistical significance. Finally, Ford et al. (2008) administered a self-report questionnaire to a sample of 264 youth in a pretrial detention center. Only 5% met criteria for a PTSD diagnosis and, although exact percentages were not provided, the authors report that the prevalence rates did not differ by gender.

In contrast, gender differences were found in eight studies: six that examined prevalence rates for the PTSD diagnosis and two that focused on symptoms rather than diagnostic status. In each of these studies, girls were more likely to demonstrate symptoms than were boys. For example, Cauffman and colleagues (1998) found that, among 189 detained youth, almost two-thirds of detained girls met criteria for a lifetime diagnosis of PTSD on a structured diagnostic interview, when compared with one-third of the boys; a further 50% of girls and 32% of boys met criteria for current PTSD. These rates are very similar to those found by Kerig and colleagues (2009, in press-a) and Wood and colleagues (2002) who found in their samples that
Table 8.1  Studies of PTSD and delinquency in juvenile justice-involved samples

<table>
<thead>
<tr>
<th>Authors</th>
<th>Sample</th>
<th>Age range</th>
<th>Setting</th>
<th>Measures used</th>
<th>Findings</th>
<th>Links to delinquency</th>
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<tbody>
<tr>
<td>Dixon et al. (2004)</td>
<td>Girls only 100 girls (48% Aboriginal; 33% White; 12% Polynesian/ Maori; 6% Asian; 1% African)</td>
<td>13.5–19</td>
<td>Detained youth (length unspecified), matched comparison</td>
<td>Semistructured interview: K-SADS-PL</td>
<td>Juvenile justice records</td>
<td>Offenders had significantly more exposure to adverse life experiences than nonoffenders</td>
</tr>
<tr>
<td>Dixon et al. (2005)</td>
<td>Girls only 100 girls (48% Aboriginal; 33% White; 12% Polynesian/ Maori; 6% Asian; 1% African)</td>
<td>13.5–19</td>
<td>Detained youth in Australia (length unspecified)</td>
<td>Semistructured interview: K-SADS-PL</td>
<td>Juvenile justice records</td>
<td>Witnessed violence (70%), traumatic news (66%), personal victimization (50%), physical abuse (49%)</td>
</tr>
<tr>
<td>Smith et al. (2006)</td>
<td>88 girls (74% White; 12% Native; 9% Latina; 2% Black; 2% Multiracial; 1% Asian)</td>
<td>13–17</td>
<td>Court mandated to out-of-home placement</td>
<td>Structured interview: DISC</td>
<td>Court records</td>
<td>76% self-reported sexual abuse, 93% had documented physical or sexual abuse</td>
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<td>76% self-reported sexual abuse, 93% had documented physical or sexual abuse</td>
<td>Strongest predictors of delinquency were measures of traumatic experiences, not PTSD</td>
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<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Setting</td>
<td>Age Range</td>
<td>Sample Characteristics</td>
<td>Measure(s)</td>
<td>Findings</td>
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<tr>
<td>Ariga et al. (2008)</td>
<td>64 girls (100% Japanese)</td>
<td>Juvenile detention center in Japan (length unspecified)</td>
<td>16–19</td>
<td>Structured interview: CAPS; Structured interview: MINI-kid</td>
<td>Sexual abuse most frequently reported (54.7%), followed by being a victim of violence (45.3%)</td>
<td>Girls with PTSD had significantly higher comorbidity with other disorders, including conduct disorder</td>
</tr>
<tr>
<td>Chu et al. (2009)</td>
<td>79 girls (51% Chinese; 38% Malay)</td>
<td>Female residential facility in Singapore</td>
<td>11–19</td>
<td>Self-report: TSCC; Self-report: YSR</td>
<td>66% reported either physical or sexual abuse. 24% reported both physical and sexual abuse</td>
<td>Girls who reported both physical and sexual abuse had the highest scores on delinquency scale</td>
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**Boys and Girls**

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Size</th>
<th>Setting</th>
<th>Age Range</th>
<th>Sample Characteristics</th>
<th>Measure(s)</th>
<th>Findings</th>
<th>Links to Delinquency</th>
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</thead>
<tbody>
<tr>
<td>Cauffman et al. (1998)</td>
<td>96 girls (29% Latina; 23% White; 21% Black; 12% Biracial; 4% Asian); 93 boys (27% Latino; 30% White; 38% Black)</td>
<td>Long-term detention facility</td>
<td>13–22</td>
<td>Semistructured interview: RPDI</td>
<td>Boys more often observers of violence; girls more often direct victims</td>
<td>Girls: 65.3% Lifetime, 48.9% full, 1.7% partial</td>
<td>Boys: 32.3% full, 19.4% partial</td>
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(continued)
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<thead>
<tr>
<th>Authors</th>
<th>Sample</th>
<th>Measures used</th>
<th>Findings</th>
<th>Exposure to trauma</th>
<th>PTSD</th>
<th>Links to delinquency</th>
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<tr>
<td><strong>McCabe et al. (2002)</strong></td>
<td>112 girls, 513 boys (30.4% Latino; 29.0% White; 19.2% Black; 12.3% Asian; 9.1% Biracial/other)</td>
<td>Structured interview: DISC-IV anxiety disorders module</td>
<td>Girls experienced more emotional abuse, physical abuse, sexual abuse, and physical neglect</td>
<td>7.1% of girls and 2.2% of boys met criteria for PTSD diagnosis (difference not statistically significant)</td>
<td>Girls more likely than boys to meet criteria for a <em>DSM-IV</em> diagnosis, including disruptive behavior disorders</td>
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<tr>
<td><strong>Wood et al. (2002)</strong></td>
<td>100 girls, 100 boys (50% Black; 50% Latino)</td>
<td>Self-report: LASC PTS symptomatology scale</td>
<td>Boys reported higher levels of community violence exposure; girls reported higher levels of physical punishment and sexual abuse</td>
<td>Girls: 52% Boys: 28% Physical abuse, sexual abuse, community violence most predictive of PTSD for girls, community violence for boys</td>
<td>For girls, exposure to physical punishment associated with gun possession and use. For both genders, community violence related to gang involvement and gun use</td>
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<tr>
<td>Authors</td>
<td>Sample Size</td>
<td>Setting</td>
<td>Measured with</td>
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<tr>
<td>Abram et al. (2004)</td>
<td>366 girls, 532 boys (54.6% Black; 28.1% Latino; 17.1% White)</td>
<td>10–18 Short-term detention facility</td>
<td>Structured interview: DISC-IV</td>
<td>93.2% boys and 84% girls reported traumatic experience; Boys reported more accidents and girls more sexual abuse</td>
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<tr>
<td>Yoshinaga et al. (2004)</td>
<td>8 girls, 40 boys (predominantly Japanese, with 22 “foreigners”)</td>
<td>14–19 Youth in short-term detention center in Japan</td>
<td>Structured interview: CAPS</td>
<td>36% of boys and 36% of girls had experienced a trauma that met DSM-IV Criterion A Boys reported more physical assaults, girls reported more unwanted sexual experiences</td>
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For girls, PTSD predicted by fearing harm to another; for boys, by witnessing violence.
Table 8.1 (continued)

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<thead>
<tr>
<th>Authors</th>
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<th>Measures used</th>
<th>Findings</th>
<th>Exposure to trauma</th>
<th>PTSD</th>
<th>Links to delinquency</th>
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<tbody>
<tr>
<td>Lawyer et al. (2006)</td>
<td>1,904 girls 2,002 boys (72% White; 15% Black; 8% Latino; 4% Native American; 1% Asian)</td>
<td>12–17</td>
<td>Nationally representative sample</td>
<td>Structured telephone interview: Modified NWS PTSD Module</td>
<td>Girls reported more sexual assaults than boys (13.2% vs. 3.5% of boys); boys reported more physical assaults than girls (21.6% vs. 13.4%)</td>
<td>20.3% of sexually assaulted and 15.1% of physically assaulted youth met criteria for PTSD diagnosis (gender differences not examined)</td>
<td>Sexually assaulted youth at higher risk for delinquency; Male gender, witnessing violence, and experiencing physical assault associated with higher likelihood of committing delinquent act</td>
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<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Age Range</td>
<td>Setting</td>
<td>Methodology</td>
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<td>Broman-Fulks et al. (2007)</td>
<td>251 girls, 70 boys</td>
<td>$M = 15.2$</td>
<td>Stratified national sample with oversampling of inner-city youth</td>
<td>Structured telephone interview: Modified NWS PTSD Module</td>
<td>65.8% reported sexual assault, with a mean age of onset of 11.2 years; 31.7% had not disclosed the assault prior to the interview</td>
<td>Lower prevalence of PTSD among youth who disclosed to mother than those who disclosed to someone else or did not disclose (gender differences not examined)</td>
<td>Nondisclosing youth twice as likely to commit offenses than disclosing youth; Male gender, experiencing multiple events, and non-familial perpetrator associated with increased delinquency</td>
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<tr>
<td>Martin et al. (2008)</td>
<td>143 girls, 220 boys (58% Black; 34% White; 4% Latino)</td>
<td>10–16</td>
<td>Detention center (varying lengths of stay)</td>
<td>Interview: TSCC</td>
<td>Girls reported more physical abuse (45%) and sexual abuse (27%) than boys (15% and 6%, respectively)</td>
<td>30% of girls and 20% of boys had clinically elevated scores on posttraumatic stress symptom scale</td>
<td>More girls than boys charged with violent crimes, including domestic violence; girls had fewer repeat arrests than boys</td>
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<tr>
<td>Authors</td>
<td>Sample</td>
<td>Age range</td>
<td>Setting</td>
<td>Measures used</td>
<td>Findings</td>
<td>Links to delinquency</td>
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<tr>
<td>Ford et al.</td>
<td>71 girls 193 boys (43% Black; 30% Latino/Latino; 27% White)</td>
<td>10–17</td>
<td>Pre-trial detention center</td>
<td>Self-report: UCLA PTSD-RI</td>
<td>61% met DSM-IV Criterion A for exposure to psychological trauma; girls more likely than boys to report sexual abuse and neglect</td>
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<tr>
<td>Ford et al.</td>
<td>90 girls 199 boys (69% White; 22% Black; 4% Latino; 4% Multiracial; 2% Native/Pacific Islander)</td>
<td>10–17</td>
<td>Short-term detention center</td>
<td>Structured interview: UCLA PTSD-RI</td>
<td>Boys exposed more to community violence or harm to loved one; girls experienced more sexual abuse and domestic violence</td>
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| Ford et al.  | 1,625 girls, 1,725 boys; 70% White, 15% African American, 8% Latino, 7% other | 12–17 | Nationally representative sample | Structured interview; Diagnostic Interview Schedule | Girls more likely than boys to be poly-victimized | – Male gender and poly-victimization associated with delinquency
### Kerig et al. (in press-b)

<table>
<thead>
<tr>
<th>Sample Measures</th>
<th>Findings</th>
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<tbody>
<tr>
<td>185 girls, 462 boys (68% White; 24% Black; 3% Latino; 3% Multiracial; 2% American Indian)</td>
<td>Girls higher than boys on total and interpersonal, trauma exposure</td>
</tr>
<tr>
<td>10–17 Short-term detention center</td>
<td>Girls: 27.6% full, 18.4% partial</td>
</tr>
<tr>
<td>Structured interview: UCLA PTSD-RI</td>
<td>Boys: 13.63% full, 14.1% partial</td>
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### Kerig et al. (in press-a)

<table>
<thead>
<tr>
<th>Sample Measures</th>
<th>Findings</th>
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<tbody>
<tr>
<td>161 girls, 337 boys</td>
<td>85.1% of girls and 72% of boys reported event that met DSM-IV Criterion A</td>
</tr>
<tr>
<td>12–17 Short-term detention center</td>
<td>Girls: 60.6% full, 24.8% partial</td>
</tr>
<tr>
<td>Structured interview: UCLA PTSD-RI</td>
<td>Boys: 44.9% full; 27.6% partial</td>
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### Becker et al. (2011)

<table>
<thead>
<tr>
<th>Sample Measures</th>
<th>Findings</th>
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<tbody>
<tr>
<td>170 girls, 417 boys</td>
<td>Young, female, African-American youth with PTSD most likely to recidivate</td>
</tr>
<tr>
<td>10–17 Short-term detention center</td>
<td>Recidivism: Readmissions to detention center over 2 years</td>
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<tr>
<td>Structured interview: UCLA PTSD-RI; MAYSI-2</td>
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approximately half of the girls and one-third of the boys met criteria for current PTSD. In turn, Yoshinaga and colleagues (2004) found that, in a sample of Japanese detained youth, 50% of the girls and 8% of the boys also met criteria for lifetime PTSD. Finally, although Ford and colleagues (2008) did not find differential rates for the PTSD diagnosis, girls in their sample evidenced higher levels of posttraumatic symptomatology than boys, and almost twice as many girls than boys demonstrated elevated levels of PTSD symptoms. These proportions are similar to those of Martin and colleagues (2008) who reported that significantly more girls (30%) than boys (20%) reported elevated rates of posttraumatic symptoms.

Taken together, the bulk of the literature provides evidence in support of the proposition that girls in the juvenile justice system are more likely than males to exhibit symptoms of PTSD. Although the results are not entirely consistent, in no study did boys’ rates exceed those of girls. But what is most striking about these results are the extremely large discrepancies in prevalence rates of PTSD across studies. Why do the rates vary so widely? There are several methodological reasons why this might be so:

Inconsistencies in the samples used. What comprises a “delinquent” sample varies significantly across studies. Delinquency in some studies is defined by legal involvement or incarceration, whereas in other studies, it is operationalized by high scores on a measure of antisocial behavior or by a diagnosis of conduct disorder. Although the terms delinquency, antisocial behavior, and conduct disorder are used synonymously, they have distinct correlates and likely have different causes (Tremblay 2003). Community youth who engage in misbehavior may differ in important ways from youth in the “deep end” of the juvenile justice system (Cauffman 2008). By a similar token, among detained youth, samples also differ in ways that are not clearly explicated. For example, youth in short-term detention awaiting adjudication may comprise a quite different population from those who have been sentenced to incarceration in longer-term facilities. Whereas the former group may include youth who are first-time, minor offenders, the latter group may include youth who are more entrenched in an antisocial lifestyle, perhaps because of the very fact that they have experienced more adversity in their lives. Samples also vary widely in the number of girls included; whereas older studies include a relatively low population of girls in detention settings, rises in rates of girls’ arrests will contribute, unfortunately, to an increasing proportion of girls in more recently gathered samples. Samples also vary in their representation of specific ethnic groups, although there were no discernable consistent patterns that would seem to provide an explanation for the discrepant findings regarding the prevalence of PTSD.

Inconsistent definitions of PTSD. How PTSD and trauma are defined and operationalized vary widely across studies. Some studies utilize measures that assess the DSM-IV criteria for a diagnosis of PTSD; however, among these, reporting is inconsistent regarding current versus lifetime presence of the disorder or Full versus Partial PTSD. Other investigators obtain ratings of posttraumatic symptoms that may or may not be representative of the disorder. Yet another group of studies use a more loosely defined concept of “trauma” by assessing youth’s exposure to adverse life events such as sexual abuse or exposure to community violence. However, aversive
events do not necessarily meet the formal definition of trauma, and exposure to such
events does not inevitably result in a traumatized reaction. In fact, meta-analyses
show that on average only 36% of children exposed to a traumatic event will go on
to display symptoms of posttraumatic stress (Fletcher 2003). In studies of detained
youth, from 36 to 81.5% report exposure to a traumatic event, whereas only between
5 and 50% report symptoms consistent with a diagnosis of PTSD (Ford et al. 2008;

Whether these statistics represent a true low prevalence rate of PTSD among
youth who have experienced traumatic events, or whether this finding is an artifact
of problems in the definition of PTSD and detection of it sequelae, is the subject of
several debates in the literature. First, regarding the definition of trauma in the
DSM-IV (American Psychiatric Association 2000), Criterion A1 calls for the event
to be one that involves “actual or threatened death or serious injury, or a threat to
the physical integrity of self or others” (p. 467); thus, emotionally distressing experi-
ences that may be termed “traumatic,” such as psychological abuse, do not necessarily
meet the DSM definition of trauma. In addition, Criterion A2 requires a subjective
response of “intense fear, helplessness, or horror” (p. 467); thus, a youth who was
maltreated but did not perceive the event to be terrifying would not meet this criterion
for a diagnosis of PTSD. However, chronic, pervasive, insidious stressors not associ-
ated with outright terror, such as emotional abuse, are known to affect children’s
development in significant ways (van der Kolk 2005). Thus, the wisdom of limiting
the view of PTSD only to events that meet Criterion A has been called into question
(Bovin and Marx 2010), particularly for the diagnosis of children and adolescents
(Nader 2008). Lastly, the diagnosis of PTSD requires not only the experiencing of a
traumatic event, but also the development of symptoms in each of three clusters:
avoidance, arousal, and reexperiencing (Criteria B, C, and D); consequently, a youth
who did not subsequently experience all three types of PTSD symptoms also would
not meet the criteria for a PTSD diagnosis. However, traumatized youth frequently
have reactions that only partially reflect these diagnostic criteria and yet are signifi-
cant enough to interfere with functioning (Cohen and Scheeringa 2009). Recent
debates in the field reflect concerns with these definitions and criteria for the PTSD
diagnosis, and the call has been made for DSM-V to revisit these issues (Brewin
et al. 2009).

It also will be important to continue examining data from detained samples to
determine whether the gender differences found are a result of response styles that
reflect an underreporting of PTSD symptoms by males. In this regard, it is noteworthy
that Yoshinaga et al. (2004) reported that 36% of both boys and girls reported expe-
riencing an event that met the formal DSM criteria but, among those youth, only
25% of the boys reported symptoms of PTSD in comparison to 75% of the girls. For
this chapter, we also looked for these patterns in our current dataset of over 600
detained youth: in our sample, over 70% of both boys and girls reported a Criterion
A trauma. Of those, only 44.9% of boys who reported symptoms of PTSD when
compared with 61% of girls, a statistically significant difference, \( \chi^2 (3) = 1.121, 
\( p < 0.05 \). Another strategy for investigating this question would be to attend more
carefully to the two facets of Criterion A: the experiencing of a horrible event (A1)
and a subjective response of horror (A2). If males are less likely than females to acknowledge terror in the face of an event that commonly would be perceived as terrifying – that is, if males are less likely to endorse Criterion A2 after experiencing an event that meets the DSM-IV definition of trauma as per Criterion A1 – this may lend credibility to the idea that males underreport PTSD due to the adoption of stoic response style that downplays the impact of significant events and minimizes the presence of symptoms. Should it turn out to be the case that response style explains the gender difference in the prevalence of PTSD, an important implication for researchers to consider would be that the use of self-report of symptoms alone might provide an insensitive and inaccurate method for detecting PTSD in males.

Inconsistency of measures and methods. Even when the formal DSM-IV criteria are used, the methods and measures used to assess PTSD vary widely, ranging from self-reports, caregiver-reports, social worker ratings, and diagnostic interviews. Measures such as the PTSD-RI provide different cut-off scores depending on whether the measure is used liberally as a screening tool (e.g., Kerig et al. in press-a) or more restrictively as an instrument to determine eligibility for a mental health referral (e.g., Kerig et al. in press-b). It is striking that even studies using the same measure and cut-off score obtain quite discrepant results depending on whether the measure was administered as a clinical interview (e.g., Kerig et al. in press-b) or as a self-report questionnaire (e.g., Ford et al. 2008). Although more time-consuming to administer than questionnaires, clinician-administered structured interviews generally are considered to be the “gold standard” for the diagnosis of PTSD (Weathers 2004), given that they provide opportunities for the interviewer to clarify questions, follow up with greater specificity when needed, and ensure that diagnostic criteria are confirmed as met or not according to the formal definitions rather than through idiosyncratic interpretations of the questions asked. For example, several of the youth in our detained samples would have failed to meet Criterion A had they been given a self-report measure of traumatic experiences that inquired about experiences of “rape” (e.g., Grisso and Barnum 2003) simply because they did not label with this term unwanted experiences involving alcohol-facilitated assaults, molestations at the hand of relatives, or gang-related initiations. Similarly, we have encountered many youth who put on a “tough front” and initially deny having been affected by a traumatic event only to go on to endorse significant numbers of symptoms as the interview progresses. In addition, given low rates of literacy among detained youth, interviews have another decided advantage over paper-and-pencil measures which could be misread or misinterpreted by youth with poor reading skills. Clinical interviews also provide for an additional level of protection of participants’ psychological wellbeing, allowing a trained interviewer to gauge a youth’s affect so as to sensitively and appropriately provide a break from the task, debriefing, or intervention when needed. Nonetheless, despite the relative strengths of interview methods, it needs to be acknowledged that even studies using structured diagnostic interviews obtain widely discrepant prevalence rates of PTSD. Clearly, future research will benefit from the use of multiple measures from multiple perspectives, something that we have not yet seen in any of the published studies on PTSD among delinquent youth.
Summary. Studies that have examined PTSD among delinquent youth have differed in their samples, their methodology, and, not surprisingly, their findings. Due to the use of different samples, measurement tools, and inconsistencies in the reporting of full, partial, current, or lifetime diagnostic status, it is difficult to draw firm conclusions about the prevalence of PTSD among delinquent youth. Although detained girls generally demonstrate the highest rates of PTSD, it is clear that delinquent boys experience high rates of PTSD compared with community samples of adolescents, where the prevalence rates are approximately 3% for girls and 1% for boys (Cuffe et al. 1998). For both genders, therefore, the role of PTSD in juvenile delinquency appears to be a critical area for future research, prevention, and intervention.

Is Trauma A Differential Risk Factor for Girls’ Delinquency?

We next reviewed the available research evidence in support of the proposition that trauma is a risk factor for delinquency that is particularly potent for girls. Among the studies of PTSD among detained youth summarized in Table 8.1, only one is longitudinal and, because the samples are composed of delinquent youth, many do not include a measure of delinquency – thus this literature is limited in its ability to shed light on this question. Therefore, we expanded our search of the literature to include studies of incarcerated youth that focus not on PTSD per se, but on whether youth have experienced events that are presumed to be traumagenic (i.e., maltreatment and community violence). Nine cross-sectional studies and ten prospective longitudinal studies were found that examined the relationship between adverse events and delinquency in juvenile justice-involved samples.

Exposure to adverse events. First, we examined the rates of exposure to adverse events. Studies of detained girls only find high rates of exposure to maltreatment and violence. For example, Chamberlain and Moore (2002) report that 93% of a sample of 42 girls mandated to out-of-home treatment had undergone a terrifying experience in the past year: 67% had been attacked or beaten, 40% had been forced to engage in a sexual act, 26% had been in a car accident, and 14% had experienced a natural disaster. In a subsequent study, Smith et al. (2006) found that sexual abuse was reported by 76% of a sample of 88 girls drawn from this same population. Ariga and colleagues (2008) found that over half of the girls in juvenile detention had experienced sexual abuse and 45% had been a victim of another form of violence. Acoca’s (1998) data from the California Girls’ Study revealed that 81% had experienced one or more form of physical or sexual abuse, and 25% had been neglected. Nearly one-third had been kicked out of their homes during their early teens – in most cases by their own mothers. Rates of maltreatment for detained youth also may vary by ethnicity, with higher rates of physical and sexual abuse reported by White girls in a long-term juvenile facility (90 and 62%, respectively) when compared with their African-American peers (70 and 46%; Holsinger and Holsinger 2005).
Among the studies that have compared rates of exposure by gender, Belknap and Holsinger (2006), Kerig et al. (in press-a, b), Martin et al. (2008), McCabe et al. (2002), and Stewart et al. (2008) found that girls had experienced more of all forms of abuse than boys. In addition, Ford et al. (2010) found that girls in the National Survey of Adolescents were more likely than boys to have experienced multiple forms of maltreatment (i.e., poly-victimization). Other investigators find that delinquent girls have experienced higher rates of physical abuse than their male peers (Dembo et al. 2007; Johansson and Kempf-Leonard 2009; Martin et al. 2008; McCabe et al. 2002; Roe-Sepowitz 2009). McCabe et al. (2002) also found that females were significantly more likely than males to experience emotional abuse and neglect. Although some researchers have not found significant differences in the overall rates of childhood maltreatment for boys and girls (Dembo et al. 1998; Smith and Thornberry 1995; Tyler et al. 2008), these studies have tended to combine various maltreatment categories in ways that might obscure gender differences.

In addition, investigators tend to find that detained girls and boys have experienced different kinds of traumatic events: for example, girls are more likely to report being direct victims, whereas boys are more often the witnesses of violence (Cauffman et al. 1998; Kerig et al. 2009, in press-a, b). In other studies, boys more often than girls report experiencing accidents (Abram et al. 2004) or physical assaults (Lawyer et al. 2006; Yoshinaga et al. 2004). However, among all these gender differences, one finding emerges with clear consistency across studies: In every study in which sexual abuse or sexual assault is assessed, girls more frequently report being victimized than do boys (Abram et al. 2004; Belknap and Holsinger 2006; Dembo et al. 1998; Ford et al. 2008; Johansson and Kempf-Leonard 2009; Kerig et al. 2009, in press-a, b; Lawyer et al. 2006; McCabe et al. 2002; Tyler et al. 2008; Wood et al. 2002; Yoshinaga et al. 2004). In addition to childhood sexual abuse, between 35 and 50% of detained females report experiencing sexual victimization outside the family (Abram et al. 2004; Dembo et al. 2007; Dixon et al. 2005; Wareham and Dembo 2007). These rates are much higher than those found for male delinquents, although the high prevalence of sexual victimization among male delinquents (approximately 20%; Dembo et al. 1998, 2007) also is concerning.

Relationships between trauma and delinquency. Next, we looked for evidence that there are gender differences in the relationships among trauma, PTSD, and delinquency in juvenile justice-involved samples. Concurrent studies of female-only samples generally find an association between exposure to adversity and delinquent behavior, as do studies including both boys and girls. Among the three studies suggestive of a gender-differentiated link, McCabe and colleagues (2002) found that adjudicated girls were more likely than boys to have experienced all forms of abuse and also were more likely to meet criteria for a diagnosis of a disruptive behavior disorder; Wood and colleagues (2002) found that physical abuse was differentially associated with gun use for girls; and Martin and colleagues (2008) found that girls in detention were more likely than boys to have experienced abuse, to have elevated scores on a measure of PTSD symptoms, and to be charged with violent crimes. However, the results of studies examining concurrent relationships between trauma and delinquency are complicated by the fact that boys overall are more likely to
engage in delinquent behavior. For example, Broman-Fulks and colleagues (2007), Ford et al. (2010), and Lawyer et al. (2006) all found that the combination of male gender and multiple forms of maltreatment was associated with the highest likelihood of delinquency.

The handful of prospective longitudinal studies we were able to locate are in a better position to address the question of whether adverse experiences increase the risk for girls’ delinquency over time, although none of these directly assessed PTSD. Although Wilson et al. (2009) found only modest longitudinal relationships between maltreatment and antisocial behavior in their meta-analysis of studies composed of a wide variety of samples, in the majority of prospective studies of juvenile justice-involved youth uncovered in our review, maltreatment and exposure to violence were predictive of delinquency (Cernkovich et al. 2008; Feiring et al. 2007; Lansford et al. 2007; Mersky and Reynolds 2003; Smith and Thornberry 1995; Stewart et al. 2008; Tyler et al. 2008; Widom et al. 2006; Widom and White 1997). For example, Cernkovich et al. (2008) found that, among 127 detained girls, those who reported having been physically or sexually abused when aged 13–21 were more likely to engage in antisocial behavior 13 years later. However, among the studies that included both genders and tested for gender differences, only one suggested that maltreatment is a stronger predictor of delinquent behavior for girls than boys. In a prospective cohort study of 1,190 youth, Widom and White (1997) found that, whereas all youth who had experienced abuse or maltreatment were at increased risk for arrest for a non-violent crime when compared with controls, only maltreated girls were at increased risk for being arrested for a violent crime. Although other studies show differences by gender, these tend to be more qualitative than quantitative: for example, Widom et al. (2006) found that the effects of maltreatment were direct for boys but were mediated by alcohol abuse for girls; Mersky and Reynolds (2003) found that maltreatment was associated with somewhat different offenses for girls than boys (i.e., having a violent petition); and Tyler et al. (2008) found that different forms of child maltreatment were better predictors of delinquency for each gender (i.e., neglect for boys and physical abuse for girls).

**PTSD as a mechanism of effect.** The question of whether PTSD comprises a mechanism by which exposure to trauma leads to antisocial behavior in boys and girls has been tested directly in very few empirical studies, only one of which is longitudinal. For example, Becker and colleagues (2011) found that PTSD, in conjunction with young age and African-American ethnicity, increased the risk of recidivism over the course of 2 years for detained girls but not for boys. The remainder of the studies published to date are cross-sectional. Wood et al. (2002) found that maltreatment was related to PTSD, and PTSD was related to delinquency, but the interrelationships among these variables were not investigated. Ford et al. (2010) found that poly-victimization was associated with an increased likelihood of PTSD and delinquency, but that the relationship between victimization and delinquency was not accounted for by PTSD. In contrast, Kerig and colleagues (2009) formally tested for mediation in samples of detained boys and girls and found that PTSD mediated the relationship between trauma exposure and internalizing symptoms for girls but mediated the relationships between trauma and both internalizing and externalizing
for boys. Similarly, using a community sample of urban adolescents, Ruchkin and colleagues (2007) found that PTSD partially mediated the relationship between exposure to violence and violent behavior – but only for boys; for girls, PTSD was a mediator of the relationship between violence exposure and internalizing symptoms. In a subsequent study, Kerig et al. (in press-b) found that PTSD symptom clusters mediated the relationships between trauma and mental health in gender-differentiated ways with, for girls only, symptoms of reexperiencing and avoidance acting as mediators of internalizing.

Summary. Although many studies show that detained girls have been exposed to more adverse events overall than boys, others do not. Instead, a very consistent finding across studies is that girls have experienced more sexual abuse than boys. Among the cross-sectional and longitudinal studies we located, there is consistent evidence for a relationship between maltreatment and delinquency for both juvenile justice-involved youth. However, few studies actually have addressed the question whether the relationship between trauma and delinquent behavior is moderated by gender, and therefore the jury must be considered still to be out on this charge.

What Mechanisms Might Account for a Relationship Between Trauma and Girls’ Delinquency?

Given that PTSD is a disorder in the anxiety spectrum, it is intriguing to consider how an internalizing disorder might lead to externalizing in youth – particularly for girls, who generally are more likely than boys to react to traumatic events with internalizing rather than externalizing problems (Gorman-Smith and Tolan 1998; Jenkins and Bell 1994). Several mechanisms have been suggested, although evidence supporting these models is only beginning to emerge (Kerig and Becker 2010).

Trauma coping model. One integrative model is that proposed by Ford and colleagues (2006), who posit that antisocial behavior comprises a means of coping with the overwhelming assault to the self that comprises trauma. In an attempt to gain a sense of control and redress, the injustice of their maltreatment, traumatized youth may adopt a “survival coping” mode in which outwardly expressed defiance and callousness masks an inner sense of hopelessness, shame, and despair. Over time, the unrelenting distress and terror associated with trauma create a heightened sense of alarm that exhausts the individual’s resources and interferes with the capacity of the executive functions of the brain to mediate thought, emotion, and behavior. Moreover, if the interpersonal environment does not respond to the youth’s distress with care and protection, defiance may give way to desperation and a perceived justification to take any means necessary to defend the self against a hostile world. In this mode, termed “victim coping,” the youth exhibits an increasing loss of empathy toward others, depleted ability to regulate affect, rigid cognitive style, and diminished sense of future. Although this model is proposed to be relevant for both genders, the fact noted earlier that girls more often have experienced more traumas within the context of interpersonal relationships – such as child abuse, parental abandonment,
or sexual assault – may perhaps make them especially vulnerable to the development
of a victim coping mentality.

**Emotion processes.** As Horowitz (1993) suggests, PTSD involves a vacillation
between dysregulated emotions and attempts to compensate through overcontrol.
Emotion dysregulation itself might contribute to the development of delinquent
behavior, such as by increasing irritability, oppositionality, and impulsivity
(Pappagallo et al. 2004). However, another purported mechanism specifically linking
PTSD and juvenile delinquency is the defensive strategy of emotion numbing.

Lansford and colleagues (2006) speculated that emotion numbing might act as a
“pathological adaptation” (p. 51) which protects the youth from the conscious
awareness of overwhelming distress, while at the same time increasing the likeli-
hood that the youth will act it out against others. In a preliminary test of this model
in a sample of 123 middle school children, Allwood and Bell (2008) found that
PTSD symptoms mediated the relationship between violence exposure and perpe-
tration, but emotion numbing did not help to explain this relationship. A broader
construct related to emotion numbing is experiential avoidance, which includes
emotional, cognitive, and behavioral efforts to block a traumatic experience from
awareness (Hayes et al. 1996). In a sample of detained youth, Zerubavel and colleagues
(2009) found that experiential avoidance was highest among those whose traumatic
experiences were characterized by betrayal in the context of a personal relationship.
Clearly more research is needed to determine whether these emotion regulation
strategies provide a possible explanatory mechanism for the prediction of juvenile
delinquency.

**Cognitive processes.** A third set of mechanisms proposed is in the cognitive realm
and focuses on the role of attributions of stigmatization and shame in the develop-
ment of delinquent behavior. Both stigma (the perception of being “damaged goods”)
and shame (the belief that one’s inherent “badness” is responsible for negative events)
are internal experiences that arise in the context of traumatic abuse (Finkelhor and
Browne 1985), which is all-too common in lives of delinquent youth. Perceived
stigma is theorized to contribute to the development of a deviant identity, and, in an
try to maintain consistency with that negative self-view, draws youth toward
engagement in misbehavior and association with antisocial peers (Feiring et al.
2007). Shame, in turn, engenders an uncomfortable internal state that the youth
attempts to escape through displacement into anger, which increases the likelihood
of aggression toward others. As the literature reviewed in this chapter shows, girls
are disproportionately likely to have experienced sexual abuse, a form of trauma
that is particularly heavily implicated in the development of stigmatization and
shame (Finkelhor and Brown 1985; Freyd 1997); therefore, it is conceivable that
these negative cognitions might comprise particularly powerful predictors for
female delinquency. In one of the few studies to test these mechanisms of effect,
Feiring and colleagues (2007) found that, among 160 youth with histories of child
sexual abuse (73% of whom were girls), stigma and shame following from the abuse
were related to increased delinquent behavior over the course of 6 years, and this
relationship was mediated by anger and affiliation with deviant peers.
Attachment. A fourth promising integrative model derives from attachment theory, which focuses on how disturbed parent–child relationships become internalized and guide thoughts, feelings, and behavior along maladaptive pathways. According to attachment theorists, the risk factors that contribute to delinquency – particularly violence in the home – affect important underlying developmental processes that are crucial for the formation of healthy individuation and satisfying intimate relationships (Allen et al. 1997; Becker and Kerig in press). Youth from maltreating homes develop internal working models of relationship that are characterized by insecurity, anxiety, and expectations of hostility and rejection from others (Cicchetti and Howes 1991), expectations that may become self-fulfilling prophecies and thus justify the belief that “the best defense is a good offense.” As they emerge into adolescence, youth who have experienced neglect or abuse in the home tend to precociously detach themselves from the family of origin only to form intense but dysfunctional attachments to troubled peers (Wolfe and Wekerle 1997), peers whose influence helps to pull the youth further toward an antisocial lifestyle (Patterson et al. 1998). In short, youth who are unable to develop the kind of trusting and trustworthy relationships that might foster prosocial behavior are at increased risk for not only moving away from others, but also moving against them. In one promising study of this model drawn from a community sample, Salzinger et al. (2007) found that attachment to parents mediated the relationship between earlier child abuse and later self-reports of violent delinquency, with the model supported equally well for boys and girls.

Transactional effects. Definitive research on the relationships between traumatic experiences, PTSD, and delinquency also will need to take a transactional, dynamic approach. The experiential avoidance framework (Hayes et al. 1996) would suggest that some forms of delinquent behavior – such as sexual promiscuity, substance use, or running away – comprise maladaptive strategies for coping with trauma, and thus derive directly from posttraumatic stress. However, even should it prove to be the case that trauma is a catalyst that sets youth on the pathway to delinquency, it also is likely that engagement in a delinquent lifestyle in turn increases youth exposure to traumatic events – whether in the form of unintended byproducts of high-risk behaviors, such as car accidents or drug overdoses; intentional acts perpetrated by antisocial peers; such as physical or sexual assaults; or rituals associated with the antisocial lifestyle itself, such as violent gang initiations. Therefore, a dynamic developmental model must consider the possibility that trauma might lead to engagement in risky behaviors, which increase the likelihood of involvement in the juvenile justice system, thus contributing to further stigmatization and alienation, further fostering the adoption of a delinquent lifestyle/identity/peer group, which in turn increases the risk of exposure to new traumatic events.

In addition, particularly for girls, there is concern that involvement in the juvenile justice system in itself comprises a traumatic stressor. Not only is there concern that the experience of arrest and incarceration itself might trigger posttraumatic reactions in traumatized girls (Hennessey et al. 2004), but Acoca (1998) also provides harrowing descriptions of verbal, emotional, physical, and sexual abuse enduring by girls during
their detention: “the abuses that a majority of girls have experienced in their homes, in their schools, or on the streets are often mirrored and compounded by injuries they later received within the juvenile justice system” (p. 562). The iatrogenic effects of detention, and how those interact particularly with the sequelae of trauma, will be an important topic for further study and clinical attention.

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