

## Evidence-Based Assessment of Conduct Problems in Children and Adolescents

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*This article provides a summary of research in 4 areas that have direct and important implications for evidence-based assessment of children and adolescents with conduct problems (CP): (a) the heterogeneity in types and severity of CP, (b) common comorbid conditions, (c) multiple risk factors associated with CP, and (d) multiple developmental pathways to CP. For each of these domains, we discuss implications for evidence-based assessment, present examples of specific measures that can aid in such assessments, and provide recommendations for evidence-based assessment of CP in children and adolescents. We conclude that there is a need to (a) enhance the clinical utility of evidence-based measures for assessing CP; (b) increase attention to the sensitivity of such measures to change, for both treatment evaluation and monitoring; and (c) develop assessment methods that reliably and validly identify a child or adolescent's placement and progress on the various developmental pathways to CP.*

The study of conduct problems (CP) in youth has been a major focus of research in child psychology for a number of reasons. First, CP is one of the most common reasons that children and adolescents are referred to mental health clinics (Frick & Silverthorn, 2001) or to residential treatment centers (Lyman & Campbell, 1996). The high rate of referral for CP is likely due to the significant disruptions caused by these problems at home (Frick, 1998) and school (Gottfredson & Gottfredson, 2001). Second, severe CP is the form of psychopathology that has been most strongly associated with delinquency (Moffitt, 1993). There has been increased recognition in recent years of the societal costs associated with juvenile crime, including the direct harm to victims, the decrease in quality of life associated with high-crime neighborhoods, and the costs of incarceration or other forms of responding to delinquent youth (Loeber & Farrington, 2000). Third, severe CP can also be quite stable, leading to problems in adjustment across the life span (Frick & Loney, 1999). This stability adds to the societal costs associated with juvenile antisocial behavior. For example, the estimated cost to society of a single youth engaging in 4 years of offending as a juvenile and 10 years of offending as an adult ranges from \$1.7 million to \$2.3 million in 1997 U.S. dollars (Cohen, 1998).

This extensive body of research has led to an increased understanding of the many processes that may be involved in the development of severe CP (Dodge & Pettit, 2003; Frick, 1998; Loeber & Farrington, 2000; Raine, 2002), with important implications for designing more effective interventions to prevent or treat these problems (Conduct Problems Prevention Research Group, 2000; Frick, 1998, 2001). Unfortunately, there has been little attention paid to the implications that this research may have for improving the methods for assessing children and adolescents with severe CP. However, if the field is to continue to improve its intervention technology by being guided by advances in basic research, it is critical that assessment strategies used in practice are also informed by research findings. If constructs found to be important in the development and maintenance of CP in research cannot be measured in a way that is useful for clinical practice, it is very difficult to use these findings to guide prevention and treatment (Frick, 2000).

An exhaustive review of the recent research on CP and the many measures that may be useful in the clinical assessment of antisocial youth is not possible within the space limitations of this article. Therefore, we chose to focus on four findings from research that (a) have clear implications for the prevention and treatment of CP and (b) illustrate the importance of evidenced-based assessment practices for linking research and intervention. First, severe CP encompasses a broad range of antisocial and aggressive behaviors

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that vary widely in their form and severity. Second, youths with CP often have a number of significant problems in adjustment, in addition to their CP behavior, that contribute to the level of impairment experienced by the child or adolescent. Third, there are a large number of risk factors that can act in additive, interactive, or transactional manners to contribute to the development of CP. Fourth, what risk factors may be involved in the development of CP and how they place a child or adolescent at risk for acting in an antisocial and aggressive manner may differ across subgroups of youths with CP. Stated another way, there are multiple developmental pathways leading to CP.

This article provides a summary of the research in each of these four areas important for understanding and assessing youth with CP. Within each area, we provide a more extended discussion of the implications of this research for guiding clinical assessments, so that these assessments can enhance the quality of services provided to youth with CP. We provide recommendations for evidence-based assessment of children and adolescents with CP, identify overarching issues in applying this knowledge to the assessment of youths with CP, and identify areas for advancing evidence-based assessments of CP that we believe are in need of greater attention.

### Heterogeneity in the Types and Severity of CP

#### Research Findings

CP constitutes a broad spectrum of "acting-out" behaviors, ranging from relatively minor oppositional behaviors such as yelling and temper tantrums to more serious forms of antisocial behavior such as aggression, physical destructiveness, and stealing. These behaviors typically co-occur as a complex or syndrome. When displayed as a cluster, these behaviors have been referred to as "oppositional," "antisocial," "conduct-disordered," and "delinquent" (see Hinshaw & Lee, 2003, for a thorough discussion of terminology). Our conceptualization of CP is consistent with, but not isomorphic with, the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev. [DSM-IV-TR]; American Psychiatric Association, 2000) diagnostic categories of oppositional defiant disorder (ODD) and conduct disorder (CD). ODD is a pattern of negative (e.g., deliberately doing things that annoy other people, blaming others for own mistakes), disobedient (e.g., defying or not complying with grownups' rules or requests), and hostile behaviors (e.g., losing temper). CD consists of more severe antisocial and aggressive behavior that involves serious violations of others' rights or deviations from major age-appropriate norms. The behaviors are categorized into four groups: aggressive-

ness to people and animals (e.g., bullying, fighting), property destruction (e.g., fire setting, other destruction of property), deceptiveness or theft (e.g., breaking and entering, stealing without confronting victim), and serious rule violations (e.g., running away from home, being truant from school before age 13).

The relation between ODD and CD behaviors is important conceptually. First, there appears to be a hierarchical relation between the two diagnoses. That is, most children and adolescents with the more severe symptoms of CD also show the symptoms of ODD (Lahey & Loeber, 1994). However, the reverse is not true. There are many youth with ODD who do not show the more serious CP associated with CD. Second, there is a developmental relation between ODD and CD. A 3-year longitudinal study of clinic-referred boys found that 82% of the new cases of CD that emerged during the study period had received a diagnosis of ODD in the preceding year (Lahey & Loeber, 1994). Therefore, the presence of ODD behaviors can be viewed as a risk factor for the development of the more severe CD.

In addition to the *DSM-IV-TR* distinction between ODD and CD, other methods have been used to separate different types of CP behaviors. Frick et al. (1993) conducted a meta-analysis of more than 60 published factor analyses on more than 28,401 children and adolescents. They found that CP could be described by two bipolar dimensions. The first dimension was an overt-covert dimension. The overt pole consisted of directly confrontational behaviors such as oppositional defiant behaviors and aggression. In contrast, the covert pole consisted of behaviors that were nonconfrontational in nature (e.g., stealing, lying; see also Patterson & Yoerger, 2002; Tiet, Wasserman, Loeber, Larken, & Miller, 2001; Tolan, Gorman-Smith, & Loeber, 2000; Willoughby, Kupersmidt, & Bryant, 2001). However, a second dimension also seemed to be important for explaining the covariation of CP. This dimension was a destructive-nondestructive dimension. This dimension divided the overt behaviors into those that were overt-destructive (aggression) and those that were overt-nondestructive (oppositional), and it divided the covert behaviors into those that were covert-destructive (property violations) and those that were covert-nondestructive (status offenses; i.e., those behaviors that are illegal because of the child or adolescent's age).

The clustering of CP into these four symptom patterns has proven to be useful for three purposes. First, this division of CP is fairly consistent with the distinctions made in many legal systems for differentiating types of delinquent behaviors, which generally distinguish between violent offenses (overt-destructive), status offenses (covert-nondestructive), and property offenses (covert-destructive; e.g., Office of Juvenile Justice and Delinquency Prevention, 1995). Second,

this grouping of CP can aid in distinguishing between youths who show a single type of CP (e.g., aggressive behavior only) from those who show a more varied pattern of CP behavior (e.g., both aggression and status offenses; see Christian, Frick, Hill, Tyler, & Frazer, 1997). This distinction is important because the more varied pattern of CP is associated with a poorer outcome (Frick & Loney, 1999; Loeber et al., 1993). Third, there may be differences in the etiology of different types of CP. For example, a twin study found that genetic factors seem to play a greater role in the development of the destructive behaviors (i.e., property violations and aggression) than in the development of the nondestructive behaviors (i.e., oppositional, status offenses; Simonoff, Pickles, Meyer, Silberg, & Maes, 1998).

Two specific forms of CP behavior—noncompliance and aggression—deserve additional attention. Noncompliance (i.e., excessive disobedience to adults) appears to be a keystone behavior in the development of CP. It appears early in the progression of CP and continues to be manifested in subsequent developmental periods (e.g., Chamberlain & Patterson, 1995; Loeber et al., 1993; McMahon & Forehand, 2003), playing a role in subsequent academic and peer relationship problems. Low levels of compliance are also associated with referral for services in young children with CP (Dumas, 1996). Furthermore, intervention research has shown that when child noncompliance is targeted, there is often concomitant improvement in other CP behaviors as well (Russo, Cataldo, & Cushing, 1981; Wells, Forehand, & Griest, 1980).

The importance of aggression as a dimension of CP is supported by research showing that aggressive behavior in children and adolescents is often quite stable and very difficult to treat (Huesmann, Eron, Lefkowitz, & Walder, 1984). Importantly, research has found that there appear to be several different forms of aggressive behavior (Crick & Dodge, 1996; Poulin & Boivin, 2000). The first type of aggression is often referred to as retaliatory aggression, hostile aggression, or reactive aggression, in which aggression is viewed as a defensive reaction to a perceived threat and is characterized by anger and hostility (Crick & Dodge, 1996). The second type of aggressive behavior is generally unprovoked and is used for personal gain (instrumental) or to influence and coerce others (bullying and dominance). This type of aggressive behavior is referred to as instrumental aggression, premeditated aggression, or proactive aggression (Poulin & Boivin, 2000).

These different types of aggression often co-occur, with correlations ranging from  $r = .40$  to  $.70$  in school-age samples (Poulin & Boivin, 2000). Despite this high degree of association, many studies have documented different correlates to the two forms of aggression. For example, reactive aggression has been associated with

higher risk for social isolation and social rejection by peers (Dodge & Pettit, 2003) and a temperamental propensity for angry reactivity and emotional dysregulation (Hubbard et al., 2002). Reactively aggressive youth also show a number of deficits in their social information processing, such as having difficulty employing effective problem-solving skills in social situations and showing a hostile attributional bias to ambiguous provocation situations (Crick & Dodge, 1996). Proactively aggressive youth, on the other hand, associate more positive outcomes with their aggressive behavior and report significantly fewer symptoms related to anxiety than reactive aggressive youth (Schwartz et al., 1998). In addition to proactive and reactive forms of aggression, both of which are overt in nature, Crick and Grotpeter (1995), among others, have identified a form of indirect aggression called relational aggression, which involves strategies such as social isolation and exclusion and behaviors, including slandering, rumor spreading, and friendship manipulation. Evidence suggests that relational aggression occurs more frequently in girls (Underwood, 2003), and it may be possible to divide it into instrumental and reactive forms as well (Little, Jones, Henrich, & Hawley, 2003).

### Implications for Assessment

Based on this research showing the heterogeneity of CP behavior, a primary goal of assessment is to carefully and thoroughly assess the number, types, and severity of the CP and the level of impairment that the CP is causing for the child or adolescent (e.g., school suspensions, police contacts, peer rejection). This is essential, not only for diagnosis and screening, but to determine the validity of the initial referral, so that primary diagnoses of other disorders and the occasional referral due to inappropriate parent or teacher expectations can be identified (i.e., case conceptualization and planning). To obtain an accurate representation of the referred youth's CP behavior, it is important to use multiple assessment methods. Several methods are especially helpful in this respect. These include interviews with the parents, youth, and other relevant parties (e.g., teachers); behavior rating scales; and behavioral observations in the clinic, home, or school settings. The first section of Table 1 lists instruments that can be used for assessing CP.

Interviews can be divided into two general categories: clinical interviews and structured diagnostic interviews. The clinical interview with the parent is of major importance. Besides providing a method for assessing the type, severity, and impairment associated with CP, this clinical interview with the parent helps to assess typical parent-child interactions that may be contributing to the CP, the antecedent stimulus conditions under which CP behaviors occur, and the consequences that accompany such behaviors. A number of

**Table 1.** Implications of Research for the Assessment of Children and Adolescents With Conduct Problems

| Assessment Focus                                 | Measures   |
|--|--|
| Heterogeneity in Types and Severity of CP        |  |
| Screen broadly for CP behaviors                  | ASEBA, BASC-2; DISC/DICA; CI   |
| Focused assessments of:                          |  |
| ODD/CD diagnosis                                 | DISC/DICA; ASEBA ( <i>DSM</i> scales); CSI-4   |
| Overt/covert CP                                  | ASEBA (Aggressive Behavior vs. Rule-Breaking Behavior); BASC-2 (Aggression vs. Conduct Problems); RBPC (Conduct Disorder vs. Social Aggression); ECBI/SESBI; Self-Report Delinquency Scale; PDR; DISC/DICA; CI |
| Overt CP only                                    | Conner's Rating Scales; Problem-Solving Discussion; AET  |
| Covert CP only                                   | Temptation Provocation Tasks (stealing/property destruction, fire setting)   |
| Noncompliance                                    | Child's Game/Parent's Game/Clean-Up (BCS; DPICS-II); Compliance Test; REDSOC   |
| Reactive/proactive aggression                    | Parent Checklist; Teacher Checklist; Aggressive Behavior Rating Scale  |
| Relational aggression                            | Ratings of Children's Social Behavior; peer nominations  |
| Delinquency                                      | SRD  |
| Functional impairment/adaptive disability        | CGAS; CIS; CAFAS; NABC   |
| Comorbid Adjustment Problems                     |  |
| Screen broadly for comorbid disorders/conditions | ASEBA, BASC; DISC/DICA, CI   |
| Focused assessments (as needed)                  |  |
| ADHD   | ADHD Rating Scale  |
| Depression                                       | Child Depression Inventory; K-SADS <sup>a</sup>  |
| Anxiety  | ADIS-C/P <sup>a</sup>  |
| Substance use                                    | AAIS; DAST-A; DISC/DICA  |
| Language impairment                              | CBCL/1½-5-LDS  |
| Academic underachievement                        | Intellectual/learning disability Evaluation  |
| Functional impairment/adaptive disability        | See above  |
| Multiple Risks                                   |  |
| Biological Factors                               |  |
| Temperament                                      | Children's Behavior Questionnaire  |
| Cognitive Correlates                             |  |
| Social-information processing                    | Intention-Cue Detection Task; Problem-Solving Measure for Conflict; WALLY Game; SCAP   |
| Family   |  |
| Parent-child interaction                         | Child's Game/Parent's Game/Clean-Up (BCS; DPICS-II); Problem-Solving Discussion  |
| Parenting practices                              | Parenting Scale; Alabama Parenting Questionnaire   |
| Parental personal/marital adjustment             | Beck Depression Inventory-II; Antisocial Behavior Checklist; SMAST/DAST/AUDIT; <i>DSM-IV</i> ADHD Rating Scale; Dyadic Adjustment Scale or Marital Adjustment Test; O'Leary-Porter Scale                       |
| Parenting cognitions                             | Parenting Sense of Competence; Parenting Locus of Control Scale  |
| Parenting stress                                 | Parenting Stress Index   |
| Peers  |  |
| Peer interaction problems                        | BASC-2; ASEBA; SNAP!   |
| Broader Social Context                           |  |
| Insularity                                       | Community Interaction Checklist  |
| Neighborhood dangerousness                       | Neighborhood Questionnaire   |
| Exposure to violence                             | Things I Have Seen and Heard   |
| Multiple Developmental Pathways                  |  |
| Age of onset of CP behaviors                     | DISC/DICA, CI  |
| Callous-unemotional traits                       | Antisocial Process Screening Device  |

*Note:* CP = conduct problems; ODD = oppositional defiant disorder; CD = conduct disorder; ADHD = attention deficit hyperactivity disorder; ASEBA = Achenbach System of Empirically Based Assessment; BASC-2 = Behavioral Assessment System for Children (2nd ed.); DISC/DICA = Diagnostic Interview Schedule for Children/Diagnostic Interview for Children and Adolescents; CSI = Child Symptom Inventory; CI = clinical interview; RBPC = Revised Behavior Problem Checklist; ECBI/SESBI = Eyberg Child Behavior Inventory/Sutter-Eyberg Child Behavior Inventory; PDR = Parent Daily Report; AET = academic engaged time; BCS = Behavioral Coding System; DPICS-II = Dyadic Parent-Child Interaction Coding System-II; REDSOC = Revised Edition of the School Observation Coding System; SRD = Self-Report Delinquency Scale; K-SADS = Schedule for Affective Disorders and Schizophrenia for School-Aged Children; ADIS-C/P = Anxiety Disorders Interview Schedule for Children; CGAS = Children's Global Assessment Scale; CIS = Columbia Impairment Scale; CAFAS = Child and Adolescent Functional Assessment Scale; NABC = Normative Adaptive Behavior checklist; AAIS = Adolescent Alcohol Involvement Scale; DAST-A = Drug Abuse Screening Test for Adolescents; CBCL/1½-5-LDS = Language Development Survey; SCAP = Social-Cognitive Assessment Profile; SMAST/DAST/AUDIT = Short Michigan Alcoholism Screening Test/Drug Abuse Screening Test/Alcohol Use Disorders Identification Test.

<sup>a</sup>These structured diagnostic interviews may be considered for more in-depth assessment of anxiety (ADIS-C/P; Silverman & Nelles, 1988) and affective (K-SADS; Ambrosini, 2000) disorders.

interview formats are available to aid the clinician in structuring the information obtained from the parents about their child's behavior and parent-child interactions (e.g., McMahon & Forehand, 2003; Patterson, Reid, Jones, & Conger, 1975; Wahler & Cormier, 1970). An individual interview with the child or adolescent may or may not provide useful information, depending on the age and developmental level of the child and the nature of the specific behaviors. For example, it has been difficult to obtain reliable self-report information from interviews with children below the age of 9 (Loney & Frick, 2003). Further, when assessing overt types of CP, Loeber and Schmalzing (1985) have suggested that maternal and teacher reports may be preferable to youth reports, because youth often underestimate their own aggressive behavior (see also David & Kistner, 2000; Edens, 1998). However, when assessing covert types of CP, more valid reports are likely to be obtained from the child or adolescent.<sup>1</sup> When the presenting problems include classroom behavior or academic underachievement, an interview with the child or adolescent's teacher or teachers is also appropriate. (See Breen & Altepeter, 1990; McMahon & Forehand, 2003; and H. M. Walker, 1995; for more extensive discussion of teacher interviewing procedures.)

One criticism of the unstructured interview has been the difficulty in obtaining reliable information in this format. Structured interviews have been used in efforts to improve the reliability and validity of the information that is obtained. Two structured diagnostic interviews that are frequently used in the assessment of children with CP are the Diagnostic Interview Schedule for Children (e.g., Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) and the Diagnostic Interview for Children and Adolescents (e.g., Reich, 2000). For recent reviews of these and other structured diagnostic interviews, see Loney and Frick (2003) and McClellan and Werry (2000). Most of these interviews provide a structured format for obtaining parent and youth report on the symptoms that constitute the criteria for ODD and CD according to *DSM-IV-TR* (American Psychiatric Association, 2000). Also, these interviews provide a structured method for assessing how much these symptoms impair a child or adolescent's social and academic functioning.

There are a number of limitations in the information provided by structured interviews, however (see Loney & Frick, 2003). The interviews are time consuming to administer (often taking more than 2 hr for youth with many problems in adjustment), and they often do not contain information that can be compared to a normative comparison group. Further, most structured interviews do not have formats for obtaining teacher information, and obtaining reliable information from young children

(below age 9) has been problematic. Thus, it is difficult to obtain multi-informant assessments for many youths using structured interviews. Perhaps one of the major limitations in the use of structured interviews, however, is the evidence that the number of symptoms reported declines within an interview schedule. That is, parents and youths tend to report more symptoms for diagnoses assessed early in the interview, regardless of which diagnoses are assessed first (Jensen, Watanabe, & Richters, 1999), calling into question the validity of symptoms assessed later in the interview.

Behavior rating scales completed by adults (i.e., parents, teachers) or the youth him- or herself are very useful as screening devices for covering a broad range of CP behaviors and for assessing other problems in adjustment that can be used to assess the level of impairment that is associated with CP. For example, many rating scales contain items assessing the child or adolescent's peer relations and academic performance, both of which are important areas of impairment that many youth with CP experience (e.g., Reynolds & Kamphaus, 2004). More important, these rating scales often provide the best norm-referenced assessment concerning the child or adolescent's CP. Specifically, these scales often have large normative bases from which scores can be obtained (e.g., *T* scores) that compare the child's level of CP to a reference group of youth of the same age and gender. Although there are many behavior rating scales, several have been used extensively in clinical practice and research with children and adolescents with CP (Kamphaus & Frick, 2002; McMahon & Estes, 1997). These scales are summarized in Table 2.

Most of the scales listed in Table 2 cover the same age range, and most have parallel forms for parent, teacher, and youth report. The exception is that the Behavioral Assessment System for Children-Second Edition (Reynolds & Kamphaus, 2004) only includes CP on its parent and teacher versions. Also, most of these scales divide the assessment of CP into scales that assess overt CP and covert CP. Exceptions are the Child Symptom Inventory-4 (Gadow & Sprafkin, 1995) and the Early Childhood Inventory-4 (Sprafkin & Gadow, 1996), whose symptoms correspond to the *DSM-IV-TR* symptom lists for ODD and CD. The various versions of the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescorla, 2000, 2001) have been shown to be sensitive to intervention effects (e.g., Kazdin, Esveldt-Dawson, French, & Unis, 1987; Webster-Stratton, 1994). The ASEBA now also includes *DSM*-oriented scales (Achenbach, Dumenci, & Rescorla, 2003).

The scales summarized in Table 2 all are broad rating scales that cover many dimensions of child and adolescent adjustment, not just CP. Also, due to the need to cover a large number of domains, they often include only a limited number of CP behaviors. There are, how-

<sup>1</sup>However, given the strong positive correlations between stealing and lying, youths who steal may not be veridical in their self-reports.

Table 2. Summary of Selected Comprehensive Behavior Rating Scales Used in the Assessment of Conduct Problems

| Scale/Authors   | Publisher                     | Age Range | Conduct Problems Assessed   | Domains Assessed  | Informant  |
|---|-------------------------------|-----------|---|---|--|
| Behavioral Assessment System for Children (2nd ed.; Reynolds & Kamphaus, 2004)  | American Guidance Service     | 2 to 21   | Aggression: overt conduct problems including oppositional behavior, arguing, and hitting.<br>Conduct problems: covert conduct problems including lying and stealing.  | Adaptability, Anxiety, Attention Problems, Atypicality, Depression, Hyperactivity, Leadership, Learning Problems, Social Skills, Somatization, Study Skills, Withdrawal, Attitude to School, Attitude to Teachers, Interpersonal Relations, Locus of Control, Relations with Parents, Self-Esteem, Self-Reliance, Sensation Seeking, Sense of Inadequacy, Social Stress   | Parent, Teacher, and Child (ages 8 to 21)                        |
| Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2000, 2001)                                   | Author, University of Vermont | 1.5 to 18 | Aggressive behavior: overt conduct problems including arguing, bragging, and being mean.<br>Rule-breaking behavior: covert conduct problems such as lying, cheating, stealing and truancy (6 to 18 only).   | 6 to 18: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems<br>(Hyperactivity—Impulsivity—Teacher's Report Form only), Competence, DSM scales: Affective Problems, Anxiety Problems, Somatic Problems, Attention Deficit/Hyperactivity Problems, Oppositional Defiant Problems, Conduct Problems<br>1.5 to 5: Emotionally Reactive, Anxious/Depressed, Somatic Complaints, Withdrawn, Sleep Problems, Attention Problems, Aggressive Behavior, Language Development Survey (1.5 to 5). DSM scales: Affective Problems, Anxiety Problems, Pervasive Developmental Problems, Attention Deficit/Hyperactivity Problems, Oppositional Defiant Problems | Parent, Teacher, and Child (ages 11 to 18)                       |
| Early Childhood Inventory-4 (Sprafkin & Gadow, 1996); Children's Symptom Inventory-4 (CSI-4; Gadow & Sprafkin, 1995). | Check-mate Plus               | 3 to 18   | Oppositional Defiant Disorder: angry, hostile, and defiant behaviors. Conduct Disorder: violations of the rights of others or age appropriate norms.  | Attention-deficit Hyperactivity Disorder, Generalized Anxiety Disorder, Social Phobia, Separation Anxiety Disorder, Major Depressive Disorder, Dysthymic Disorder, Pervasive Developmental Disorder, Autistic Disorder, Schizophrenia, Tic Disorder.  | Parent, Teacher, and Child (ages 12 to 18)                       |
| Conners' Rating Scales (Conners, 1997)  | Multi-Health Systems          | 3 to 17   | Oppositional: overt behaviors like being angry and hostile, losing temper, and arguing with adults.<br>Conduct Disorder: overt behaviors like anger, fighting, and disobedience. Socialized Aggression: covert conduct problems like stealing, substance use, lying, and truancy. | Cognitive Problems, Hyperactivity, Anxious-Shy, Perfectionism, Social Problems, Psychosomatic, Family Problems, Anger Control Problems<br>Attention Problems—Immaturity, Anxiety-Withdrawal, Psychotic Behavior, Motor Tension-Excess   | Parent, Teacher, and Child (ages 12 to 18)<br>Parent and Teacher |
| Revised Behavior Problem Checklist (Quay & Peterson, 1996)  | PAR                           | 5 to 18   |   |   |  |

Note: DSM = Diagnostic and Statistical Manual of Mental Disorders.

ever, several rating scales that focus solely on CP and provide a more comprehensive coverage of various types of CP. For example, the parent-completed Eyberg Child Behavior Inventory and the teacher-completed Sutter-Eyberg Student Behavior Inventory-Revised (Eyberg & Pincus, 1999) assess only CP behavior and have been used primarily in preschool and early school-age samples. One noteworthy feature of these measures is that they ask the rater to indicate both the frequency of occurrence of the behavior and whether the behavior is problematic and impairing.<sup>2</sup> The Eyberg Child Behavior Inventory has been shown to be sensitive to parent management training intervention effects (e.g., Eisenstadt, McElreath, McNeil, Newcomb, & Funderburk, 1993; Nixon, Sweeney, Erickson, & Touyz, 2003; Webster-Stratton & Hammond, 1997).

Another rating scale that focuses only on CP is the Self-Report Delinquency Scale (Elliott, Huizinga, & Ageton, 1985). This scale consists of 47 items that are derived from offenses listed in the Uniform Crime Reports (e.g., Federal Bureau of Investigation, 2004) and covers property offenses (e.g., "Have you ever purposely damaged or destroyed property belonging to school?"), status offenses (e.g., "Have you ever taken a vehicle for a ride without the owners' permission?"), drug offenses (e.g., "Have you ever sold hard drugs such as heroin, cocaine, and LSD?"), and violent offenses ("Have you ever been involved in gang fights?"). Importantly, the Violent Offense scale includes items that include threats of physical violence, as well as actual violence (e.g., "Have you ever hit (or threatened to hit) a teacher or other adult at school?"). The Self-Report Delinquency Scale is intended for use by 11- to 19-year-olds, who report on the frequency of engagement in each behavior over the past year. The Self-Report Delinquency Scale has been employed as a measure of intervention outcome in clinic-referred samples (e.g., Kazdin, Mazurick, & Siegel, 1994; Kazdin, Siegel, & Bass, 1992; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997).

The Parent Checklist and Teacher Checklist (Conduct Problems Prevention Research Group, 1999; Dodge & Coie, 1987) and the Aggressive Behavior Rating Scale (Brown, Atkins, Osborne, & Milnamow, 1996) were both developed to distinguish between reactive and proactive forms of aggression. The Ratings of Children's Social Behavior (Crick, 1996) is a 17-item rating scale that assesses relational aggression, using an analogous item content to the peer-nomination procedure used in past studies of relational aggression (Crick & Grotpeter, 1995).

<sup>2</sup>However, it should be noted that concerns have been raised about the extent to which the Eyberg Child Behavior Inventory and Sutter-Eyberg Student Behavior Inventory-Revised focus only on CP behavior and the adequacy of normative data (Achenbach, 2001; McMahon & Estes, 1997).

Behavioral observations provide a third common way of assessing CP behaviors. Behavioral observations in a child or adolescent's natural setting (e.g., home, school, playground) can make a unique contribution to the assessment process by providing an assessment of the youth's behavior that is not filtered through the perceptions of an informant and by providing an assessment of the immediate environmental context of the youth's behavior. In some cases, observational data of CP has been a stronger predictor of adolescent arrest rates and incarceration than has parent-reported data (Patterson & Forgatch, 1995). Because such naturalistic observations can be quite time consuming and expensive, a variety of clinic- and laboratory-based analogues have been developed, many of which have evidence to support their clinical utility and sensitivity to intervention effects (see Frick & Loney, 2000, and Roberts, 2001, for reviews). Unfortunately, for older children and adolescents, many of the common CP behaviors are by nature covert (e.g., lying and stealing), which makes them more difficult to capture through observational techniques. However, some researchers have developed and evaluated an analogue observational procedure to assess stealing and property destruction in children ages 6 to 12 years (Hinshaw, Heller, & McHale, 1992; Hinshaw, Simmel, & Heller, 1995; Hinshaw, Zupan, Simmel, Nigg, & Melnick, 1997). Kolko, Watson, and Faust (1991) employed a very brief (1 min) observation to assess children's preference for fire-related stimuli. Both of these temptation-provocation tasks demonstrated high interobserver agreement and sensitivity to treatment.

A variety of coding systems, developed for use in both natural and structured observational settings, are currently available. Two widely used, structured, microanalytic observation procedures available for assessing parental interactions with younger (3 to 8 years) children in the clinic and the home are the Behavioral Coding System (BCS; Forehand & McMahon, 1981) and the Dyadic Parent-Child Interaction Coding System II (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994). As employed in clinic settings, both the BCS and DPICS-II place the parent-child dyad in standard situations that vary in the degree to which parental control is required, ranging from a free-play situation (i.e., Child's Game, child-directed interaction) to one in which the parent directs the child's activity, either in the context of parent-directed play (i.e., Parent's Game, parent-directed interaction) or in cleaning up the toys (i.e., Clean Up). In the home setting, observations usually occur in a less structured manner (e.g., the parent and child are instructed to "do whatever you would normally do together"). In each coding system, a variety of parent and child behaviors are scored, many of which emphasize parental antecedents (e.g., commands) and consequences (e.g., praise, time out) for child compliance or noncompliance.

ance and other CP behaviors. As noted by McMahon and Metzler (1998), interobserver agreement for both coding systems is adequate, they discriminate between referred and nonreferred samples of parents and children, and they have been employed successfully as intervention outcome measures for parent management training (e.g., Eisenstadt et al., 1993; McMahon, Forehand, & Griest, 1981; Peed, Roberts, & Forehand, 1977; Webster-Stratton & Hammond, 1997). Simplified versions of both the DPICS-II and the BCS have been developed (Eyberg et al., 1994; McMahon & Estes, 1994). These adaptations are designed to reduce training demands and may ultimately prove to be more useful to clinicians. A direct observational assessment of child compliance or noncompliance can also be obtained in the clinic with the Compliance Test (Roberts & Powers, 1988), in which the parent issues a series of structured commands to the child.

For older children and adolescents, structured clinical observational paradigms have been developed for the direct assessment of parent-child communication and problem solving (see Foster & Robin, 1997, for a review). For example, Martinez and Forgatch (2001) employed a series of tasks that included a parent-child problem-solving discussion and teaching tasks with elementary school-age children. These tasks were coded for various parenting practices and child aversive behavior and noncompliance using both microanalytic and global rating systems.

When behavioral observations in the school setting are indicated, the Direct Observation Form (Achenbach & Rescorla, 2001) may be used as part of a multimodal assessment with the other versions of the ASEBA noted in Table 2.<sup>3</sup> The BCS (Forehand & McMahon, 1981) has been modified for use in the classroom to assess teacher-child interactions, both alone (e.g., Breiner & Forehand, 1981) and in combination with a measure of academic engaged time. Academic engaged time is the amount of time that a child or adolescent is appropriately engaged in on-task behavior during class time and is assessed using a simple stopwatch recording procedure (H. M. Walker, Colvin, & Ramsey, 1995). Academic engaged time has been shown to correlate positively with academic performance and to discriminate boys at risk for CP from boys not at risk (e.g., H. M. Walker, Shinn, O'Neill, & Ramsey, 1987). The Revised Edition of the School Observation Coding System (Jacobs et al., 2000), which has been used with 3- to 6-year-old clinic-referred children with ODD and nonreferred children in preschool and kindergarten classrooms, may be particularly ap-

propriate for classroom observations of young non-compliant children.

There are surprisingly little data to guide pragmatic decisions concerning the number and length of observation sessions needed to obtain reliable and valid information. Although potentially very useful, as noted earlier, observational assessment methods can be expensive in terms of time and personnel, especially if multiple observation sessions are conducted as a means of enhancing sensitivity to treatment effects (Aspland & Gardner, 2003). Reactivity to being observed does not appear to be a significant problem for most young children and parents, especially if clinicians and researchers provide the opportunity for them to become familiar with the observation procedures, use the same observer across multiple sessions, and minimize the obtrusiveness of recording equipment (Aspland & Gardner, 2003).

An alternative to observations by independent observers in the natural setting is to train significant adults in the child or adolescent's environment to observe and record certain types of behavior. The most widely used procedure of this type is the Parent Daily Report (Chamberlain & Reid, 1987), a parent observation measure that is typically administered during brief telephone interviews. Parents are asked which of a number of overt and covert behaviors have occurred in the past 24 hr. The Parent Daily Report has been employed on a pretreatment basis to assess the severity of CP, to monitor the progress of the family during therapy, and to assess treatment outcome (e.g., Patterson, Chamberlain, & Reid, 1982; Webster-Stratton & Hammond, 1997). It has the added advantages of being brief and, because of the 24-hr reporting frame, of perhaps providing more objective data than that obtained from behavior rating scales or interviews. Jones (1974) developed a brief daily interview similar to the Parent Daily Report for collecting parent-report data on stealing. The Telephone Interview Report on Stealing and Social Aggression has adequate test-retest reliability and is sensitive to the effects of treatment procedures designed to reduce stealing (Reid, Hinojosa Rivera, & Lorber, 1980).

It is being increasingly recognized that the child or adolescent's level of functional impairment, over and above CP symptomatology, is critical to determining whether the youth needs treatment and the intensity of treatment that may be required (Bird, 1999; Bloomquist & Schnell, 2002). Furthermore, degree of impairment may vary across domains of functioning, so it is important that multiple domains are assessed and by multiple informants when possible. As noted previously, structured interviews based on the *DSM* allow for the assessment of impairment. There are also a number of measures designed specifically to assess the youth's level of impairment, including the Children's Global Assessment Scale (Shaffer et al., 1983), the Co-

<sup>3</sup>The classroom observation component of the Behavioral Assessment System for Children—Second Edition (Student Observation System; Reynolds & Kamphaus, 2004) has minimal psychometric data and so is not recommended at this time (Kamphaus & Frick, 2002; Kelley, Reitman, & Noell, 2003).

lumbia Impairment Scale (Bird et al., 1993), and the Child and Adolescent Functional Assessment Scale (Hodges, 2000). Knowledge of impairment can provide useful information to the clinician concerning possible intervention targets and may also serve as an indicator of intervention outcome (e.g., Hodges, Xue, & Wotring, 2004). A related construct, adaptive disability, is based on the degree of discrepancy between the child or adolescent's adaptive functioning and IQ level (Barkley et al., 2002). Using the parent-completed Normative Adaptive Behavior Checklist (Adams, 1984) to assess adaptive functioning in samples of normal and behaviorally disruptive preschool-age children, Barkley et al. found adaptive disability to be an independent predictor of negative outcomes over and above initial levels of disruptive behavior.

### Summary

Because of the heterogeneity in CP behaviors, it is essential to assess the level and type of these behaviors. Developmentally appropriate, broadbased behavior rating scales can be completed by multiple informants in relatively brief time periods and provide good norm-referenced information on the child or adolescent's behaviors. Structured diagnostic interviews can also be employed, although they are usually much more time consuming. Noncompliance is best assessed through structured clinical interviews and observation of parent-child interaction (e.g., McMahon & Forehand, 2003). A number of clinic-based analogues to assess CP (especially in the context of parent-child interaction) demonstrate sensitivity to treatment effects. Other forms of aggression (e.g., reactive/proactive, relational) can be assessed through youth, parent, and teacher rating scales. Covert CP behaviors, because of their clandestine nature, are extremely difficult to assess. At present, clinicians are forced to rely primarily on reports from multiple informants on behavior rating scales (or, in the case of stealing, on brief phone interviews) as to whether, and to what extent, such behaviors are occurring. Innovative observational paradigms to assess covert behaviors such as stealing, property destruction, and fire-setting behaviors (e.g., Hinshaw et al., 1992; Kolko et al., 1991) are promising, but their clinical utility has yet to be demonstrated. A major task for the field is to develop valid and clinically useful instruments for the assessment of covert CP.

### CP and Comorbid Problems in Adjustment

#### Research Findings

Another important finding from research is that youths with CP are at increased risk for manifesting a

variety of other adjustment problems as well. There are a number of possible reasons for this high rate of comorbidity. It is possible that the CP behaviors disrupt the child or adolescent's psychosocial context, resulting in other problems in adjustment, such as anxiety and depression (Capaldi, 1992; Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). It is also possible that the CP itself is a result of the comorbid conditions, such as the result of the impulsivity associated with attention deficit hyperactivity disorder (ADHD; Burns & Walsh, 2002). Finally, it is also possible that the same risk factors (e.g., deficits in social cognition) may lead to the CP and the co-occurring problems in adjustment, such as peer rejection (Dodge & Pettit, 2003). Whatever the reason, understanding the common comorbid problems has proven to be very important for understanding and treating children and adolescents with CP.

ADHD is the comorbid condition most commonly associated with CP and it is thought to precede the development of CP in the majority of cases. In a meta-analytic study, Waschbush (2002) reported that 36% of boys and 57% of girls with CP had comorbid ADHD. Some investigators consider ADHD (or, more specifically, the impulsivity or hyperactivity components of ADHD) to be the "motor" that drives the development of early-onset CP, especially for boys (e.g., Burns & Walsh, 2002; Moffitt, 1993). Importantly, the presence of ADHD usually signals the presence of a more severe and more chronic form of CP in children (see Waschbush, 2002). For example, children with both ADHD and CD seem to show a greater variety of delinquent acts in adolescence (Loeber, Brinthaup, & Green, 1990), a greater number of aggressive acts in adolescence (Moffitt, 1993), and more violent offending in adulthood (Klinterberg, Andersson, Magnusson, & Stattin, 1993).

Internalizing disorders, such as depression and anxiety, also co-occur with CP at rates higher than expected by chance (Zoccolillo, 1992). In most cases, CP precedes the onset of depressive and anxiety symptoms (Loeber & Keenan, 1994), although in a minority of cases depression may precede CP behavior (e.g., Kovacs, Paulauskas, Gatsonis, & Richards, 1988). However, this relation between CP and depression may be due to common risk factors as opposed to a causal relation (Fergusson, Lynskey, & Horwood, 1996). Also, the relation appears to differ for boys and girls, at least during middle to late adolescence. Wiesner (2003) found a reciprocal relation between delinquent behaviors and depressive symptoms for girls, whereas for boys, there was a unidirectional effect of delinquent behavior on depressive symptoms. Regardless of the temporal sequencing, the co-occurrence of CP with depression appears to increase the risk for suicide in youths (e.g., Capaldi, 1991, 1992), and this risk appears to be higher for girls than for boys (Loeber & Keenan, 1994).

Additionally, Loeber and Keenan (1994) indicated that the co-occurrence of anxiety disorders with CP is also especially likely for girls. The implications of comorbid anxiety have been unclear. In some studies, youths with CP and a comorbid anxiety disorder are less seriously impaired than are youths with CP alone (e.g., J. L. Walker et al., 1991); in other studies, the presence of a comorbid anxiety disorder has not been shown to have a differential effect (e.g., Campbell & Ewing, 1990); and yet in others, comorbid anxiety is associated with increased impairment (e.g., Serbin, Moskowitz, Schwartzman, & Ledingham, 1991). In trying to explain these inconsistent findings, Frick et al. (1999) demonstrated that low levels of anxiety in some children with CP may be a sign of a more severe type of disturbance in which the child is not distressed by the consequences of his or her behavior, whereas in other children with CP, higher levels of anxiety may be due to the greater levels of impairment and stress caused by more severe behavioral problems. Also, current investigators (e.g., Frick et al., 1999; Hinshaw & Lee, 2003; Lahey & Waldman, 2003) have noted the importance of distinguishing between fear, which seems to be associated with less severe conduct problems, possibility due to its role in conscience development (Frick & Morris, 2004), and anxiety/negative affectivity, which seems to be a consequence of the child or adolescent's behavioral problems and the distress they cause the youth (Frick et al., 1999).

Both longitudinal and cross-sectional studies have documented that CP constitutes a significant risk factor for substance use (e.g., Hawkins, Catalano, & Miller, 1992). The comorbidity between CP and substance abuse is important because, when youths with CP also abuse substances, they tend to show an early onset of substance use and they are more likely to abuse multiple substances (Lynskey & Fergusson, 1995). Although most of the research on the association between CP and substance abuse prior to adulthood has been conducted with adolescents, the association between CP and substance use may begin much earlier in development (Van Kammen, Loeber, & Stouthamer-Loeber, 1991).

With preschool-age children, language impairment may be associated with increased levels of CP. Wakschlag and Danis (2004) suggested that if the CP appears to result primarily as a reaction to frustration or if the child's noncompliance appears to be due to a failure to understand directions from parents or teachers, then a language impairment may be implicated. An association between CP and academic underachievement has also been documented in research. Approximately 20% to 25% of youths with CD are underachieving in school relative to a level predicted by their age and intellectual abilities (Frick et al., 1991). In a comprehensive review, Hinshaw (1992) concluded that during preadolescence, this relation is actually a func-

tion of comorbid ADHD rather than of CP per se. In adolescence, the relation is more complex, with preexisting ADHD (and perhaps other neuropsychological deficits), a history of academic difficulty and failure, and long-standing socialization difficulties with family and peers all playing interacting roles.

### Implications for Assessment

The large number of co-occurring conditions that are often present for youth with CP suggest that assessment must be comprehensive and cover a large number of areas of adjustment, and not focus solely on CP (see Table 1). As illustrated in Table 2, many behavior rating scales provide information on a number of important areas of adjustment and thus have utility as screening instruments. As mentioned previously, these often include forms for parents, teachers, and the youth to complete providing information from multiple informants in a time-efficient manner. Further, most scales provide good norm-referenced scores to compare the child or adolescent's score to a reference group. However, to assess many of the comorbid conditions, more detailed information on the history of symptoms and the level of impairment they cause for the child or adolescent may be important. This typically requires a clinical or structured interview, perhaps in conjunction with a rating scale designed to assess functional impairment or adaptive functioning, to adequately make the diagnosis.

For example, a diagnosis of ADHD requires evidence that symptoms caused impairment for the child prior to age 7 (*DSM-IV-TR*; American Psychiatric Association, 2000). Similarly, a diagnosis of major depressive disorder requires that the symptoms of the disorder be present during the same discrete time period constituting a depressive episode. Also, assessing the temporal relation between the onset of the anxiety and depressive symptoms and CP, such as which type of symptoms onset first, could be important for determining whether the anxiety and depressive symptoms are largely secondary to the problems caused by the CP or whether they may have led to the onset of CP. Such a decision could have important treatment implications, such as determining whether interventions should largely focus on reducing the CP and the impairments associated with these behaviors as a way to reduce the level of distress experienced by the youth or whether interventions should focus directly on the youth's anxiety or depression.

Substance use can be assessed with a variety of psychometrically sound instruments for screening and diagnosis. Winters, Latimer, and Stinchfield (2002) provided a useful review of these measures. The Adolescent Alcohol Involvement Scale (Mayer & Filstead, 1979) and the Drug Abuse Screening Test for Adolescents (Martino, Grilo, & Fehon, 2000) are examples of

such measures. If CP may be occurring in the context of a language impairment, then a developmental assessment is warranted (Wakschlag & Danis, 2004). The CBCL/1½-5 (Achenbach & Rescorla, 2000) incorporates the Language Development Survey and the Behavioral Assessment System for Children—Second Edition (Reynolds & Kamphaus, 2004) includes a Functional Communication subscale, both of which assess risk factors for language delays and parental report of the a young child's expressive vocabulary and word combinations.

Given the association between CP and learning disabilities, a psychoeducational evaluation that includes a standardized intelligence test and academic achievement screener should also be a part of most evaluations of children and adolescents with CP. Furthermore, knowledge of the youth's level of intellectual functioning can provide useful prognostic information, in that a lower intelligence score is associated with persistence of childhood-onset CD and predictive of adolescent delinquency (Frick & Loney, 1999). Kaufman and Kaufman (2001) provided a comprehensive review of assessment strategies with which to evaluate level of intellectual functioning and learning problems.

### Summary

Comorbid disorders that are most likely to be encountered in youths referred for CP include ADHD, depressive and anxiety disorders, substance use problems, language impairment, and learning difficulties. As a result, most assessments of children and adolescents with CP need to be comprehensive, covering many domains of psychological functioning. Most of the same broadband measures recommended for initial use in identifying the range of CP behaviors can also be employed as general screens for the identification of comorbid disorders and conditions. Disorder-specific behavior rating scales, interviews, and other more intensive assessment procedures (e.g., intelligence and achievement testing) should then be conducted as needed for the comorbid disorders.

## Multiple Risks Associated With CP

### Research Findings

Most researchers agree that CP is the result of a complex interaction of multiple causal factors (Frick, 1998; Hinshaw & Lee, 2003; McMahan, Wells, & Kotler, in press). Identifying the important causal agents and how they interact to cause CP is still an area in need of more research. Past research has uncovered a large number of factors that are *associated* with CP and *may* play a role in their development or maintenance. These factors can be summarized into five categories:

biological factors, cognitive correlates, family context, peers, and the broader social ecology.

As noted previously, a number of researchers have proposed that early hyperactivity is a significant (and perhaps necessary) risk factor for CP (e.g., Loeber & Keenan, 1994; Moffitt, 1993). Moffitt suggested that subtle neuropsychological variations in the infant's central nervous system increase the likelihood that the infant will display characteristics such as irritability, hyperactivity, impulsivity, and negative emotionality. These temperamental dimensions measured early in life have proven to predict CP later in preschool (Keenan, Shaw, Delliquadri, Giovannelli, & Walsh, 1998), in childhood (Raine, Reynolds, Venables, & Mednick, 1997), and even into adolescence (Caspi, Henry, Moffitt, & Silva, 1995). There are number of other biological correlates (e.g., neurochemical and autonomic irregularities) of CP in children and adolescents (see Dodge & Pettit, 2003; Raine, 2002) that, although crucial for developing causal theories, are not reviewed here because the current state of knowledge is not sufficiently developed to have clear implications for assessment.

In contrast, there are several aspects of the youth's cognitive and learning styles that have been associated with CP that may be important to the assessment process (see Frick & Loney, 2000). First, in general, youths with CP tend to score lower on intelligence tests, especially in the area of verbal intelligence (Loney, Frick, Ellis, & McCoy, 1998; Moffitt, 1993). Furthermore, these scores are predictive of the persistence of childhood-onset CD and of engagement in delinquent behaviors during adolescence (Frick & Loney, 1999). Second, many children and adolescents with serious CP tend to show a learning style that is more sensitive to rewards than punishments. This has been labeled a reward-dominant response style and could explain why many of these youths persist in their maladaptive behaviors, despite the threat of serious potential consequences (Frick, Cornell, Bodin, et al., 2003; O'Brien & Frick, 1996). Third, many youths with CP show a variety of deficits in their social cognition, which is the way they interpret social cues and use them to respond in social situations (Crick & Dodge, 1994; Webster-Stratton & Lindsay, 1999). For example, children and adolescents with CP have been shown to have deficits in encoding (e.g., lack of attention to relevant social cues, hypervigilant biases), to make more hostile attributional biases and errors in the interpretation of social cues, to have deficient quantity and quality of generated solutions to social situations, to evaluate aggressive solutions more positively, and to be more likely to decide to engage in aggressive behavior (Dodge & Pettit, 2003).

These dispositional characteristics (i.e., difficult temperamental style and deficits in social-information processing) may then place the youth at risk for devel-

oping an insecure attachment to his or her parent (Greenberg, Speltz, & DeKlyen, 1993) or a coercive style of parent-child interaction (Patterson, Reid, & Dishion, 1992). Both of these problems in the parent-child relationship have been implicated in the development of CP, although the relation between insecure patterns of attachment in infancy and later CP is probably mediated or moderated by other risk or protective factors (e.g., parenting practices, maternal depression, family adversity) over time (e.g., Greenberg et al., 1993; Lyons-Ruth, 1996). The critical role of parenting practices in the development and maintenance of CP has been well established (e.g., Chamberlain & Patterson, 1995; Loeber & Stouthamer-Loeber, 1986). Types of parenting practices that have been closely associated with the development of CP include inconsistent discipline, irritable explosive discipline, low supervision and involvement, and inflexible rigid discipline (Chamberlain, Reid, Ray, Capaldi, & Fisher, 1997).

In addition to parenting practices, various other risk factors that may have an impact on the family and serve to precipitate or maintain CP have been identified. These include familial factors such as parental social cognitions (e.g., perceptions of the child), parental personal and marital adjustment, parental stress, and parental functioning in extrafamilial social contexts (McMahon & Estes, 1997). Less clear are the mechanisms by which these factors exert their effects on CP. For example, these risk factors may have a direct effect on CP, or they may exert their effects by disrupting parenting practices (Patterson et al., 1992). Further, in some cases, the familial "risk" factor may be a *result* of CP, rather than a potential cause, such as a child or adolescent with CP being more difficult to monitor and supervise (Stattin & Kerr, 2000). With these caveats in mind, we note some of the relations of these factors to CP.

Parents of children with CP display more maladaptive social cognitions, and they experience more personal (e.g., depression, antisocial behavior) and interparental (e.g., marital problems) distress and greater social isolation (e.g., insularity) than do parents of nonreferred youths. Parents of clinic-referred children with CP are more likely to misperceive their children's behaviors (e.g., Holleran, Littman, Freund, & Schmaling, 1982; Wahler & Sansbury, 1990), to have fewer positive and more negative family-referent cognitions (Sanders & Dadds, 1992), and to perceive CP behaviors as intentional and attribute them to stable and global causes (Baden & Howe, 1992). Sense of parenting efficacy has been shown to relate negatively to CP in both clinic-referred and nonreferred samples (e.g., Johnston & Mash, 1989; Roberts, Joe, & Rowe-Hallbert, 1992).

Parental personal adjustment has been implicated in the development of CP. Maternal depression may ad-

versely affect parenting behavior, and it may also negatively bias maternal perceptions of children and adolescents with CP (e.g., Dumas & Serketic, 1994; Fergusson, Lynskey, & Horwood, 1993). Mothers of youths presenting with comorbid CP and ADHD have been shown to be at increased risk for a history of childhood ADHD themselves (Chronis et al., 2003). Parental antisocial behavior has received increasing attention as both a direct and indirect influence on the development and maintenance of CP. Links between parental criminality, aggressive behavior, and a diagnosis of antisocial personality disorder and childhood delinquency, aggression, and CD/ODD diagnoses have been reported by a number of investigators (see Frick & Loney, 2002, for a review). There is some evidence to suggest that parental antisocial behavior may play a more central role than other risk factors in its effect on parenting practices and CP (e.g., Frick & Loney, 2002; Patterson & Capaldi, 1991). For example, parenting and marital status were not associated with CP independently of parental antisocial personality disorder (Frick et al., 1992).

Similarly, parental substance abuse has been associated with CP, at least partly because of its association with disrupted parenting practices (Patterson et al., 1992; Wills, Schreiber, Benson, & Vaccaro, 1994). In families with parental alcohol problems, the parents are less able to engage their children and are less congenial (Jacob, Krahn, & Leonard, 1991; Whipple, Fitzgerald, & Zucker, 1995). In addition, children's inappropriate behavior increases parental alcohol consumption (for parents with a positive family history of alcohol problems) and distress (for all parents; Pelham & Lang, 1993).

Marital distress and conflict have been shown to be associated with CP, negative parenting behavior, and parental perceptions of youth maladjustment (Amato & Keith, 1991; Cummings & Davies, 1994). The most commonly offered hypothesis for the relation has been that marital distress and conflict interfere with the parents' ability to engage in appropriate parenting practices, which then leads to CP.<sup>4</sup> More narrowly focused constructs that relate directly to parenting, such as disagreement over child-rearing practices, marital conflict in a child's presence, or the strength of the parenting alliance, may demonstrate stronger relations to CP than broader constructs such as marital distress (e.g., Abidin & Brunner, 1995; Jouriles et al., 1991; Porter & O'Leary, 1980).

<sup>4</sup>However, other explanations are possible (see Rutter, 1994). These include direct modeling of aggressive and coercive behavior and the cumulative stressful effects of such conflict, including maternal depression. It has been suggested that both youth CP and parental marital distress or conflict may be the result of parental antisocial behavior in some cases (Frick & Jackson, 1993).

Parents of children or adolescents with CP also appear to experience higher frequencies of stressful events, both minor ones (e.g., daily hassles) and those of a more significant nature (e.g., unemployment, major transitions; Patterson, 1983; Webster-Stratton, 1990). The effects of stress on CP may be mediated through parenting practices such as disrupted parental discipline (e.g., Snyder, 1991) and maladaptive parental social cognitions (e.g., Johnston, 1996).

In addition to the family context, the child or adolescent's relationship with peers plays a significant role in the development, maintenance, and escalation of CP. Research has documented a relation between peer rejection in elementary school and the later development of CP (Roff & Wirt, 1984). In addition, peer rejection in elementary school is predictive of an association with a deviant peer group (i.e., one that shows a high rate of antisocial behavior and substance abuse) in early adolescence (e.g., Fergusson, Swain, & Horwood, 2002). This relation is important because association with a deviant peer group leads to an increase in the frequency and severity of CP (Patterson & Dishion, 1985), and it has proven to be a strong predictor of later delinquency (Patterson, Capaldi, & Bank, 1991) and other negative outcomes, such as substance abuse (Dishion, Capaldi, Spracklen, & Li, 1995; Fergusson et al., 2002). Therefore, peer rejection may be directly related to the development of CP but also may indirectly influence CP by increasing the chance that the child or adolescent will associate with a deviant peer group.

Finally, there are factors within the youth's larger social ecology that may play a causal role in the development of CP. One of the most consistently documented of these correlates has been low socioeconomic status (Frick, Lahey, Hartdagen, & Hynd, 1989). However, several other ecological factors, many of which are related to low socioeconomic status, such as poor housing, poor schools, and disadvantaged neighborhoods, have also been linked to the development of CP (see Frick, 1998; Peeples & Loeber, 1994). In addition, the high rate of violence witnessed by youths who live in impoverished inner-city neighborhoods has been linked to the development of CP (Osofsky, Wewers, Hann, & Fick, 1993).

Some parents of children with CP may be quite isolated from friends, neighbors, and the community. Wahler and Dumas (1984) developed a construct called "insularity," which is defined as a "specific pattern of social contacts within the community that is characterized by a high level of negatively perceived coercive interchanges with relatives and/or helping agency representatives and by a low level of positively perceived supportive interchanges with friends" (p. 387). Insularity is positively related to negative parent behavior directed toward children and oppositional child behavior directed toward parents (Dumas & Wahler, 1985; Wahler, 1980). It has also been associated with poor

maintenance of parent management training effects (e.g., Dumas & Wahler, 1983). Thus, when a mother has a large proportion of aversive interactions outside the home, the interactions between the mother and her child in the home are likely to be negative as well.

### Implications for Assessment

Research clearly documents a myriad of factors in various domains, both internal and external to the child or adolescent, that have been associated with CP. The availability of instruments to assess these many factors is quite variable. In this section, we note those that seem most salient and potentially appropriate for use in an applied setting, although the clinical utility of many of these instruments has yet to be demonstrated. (See Table 1 for a list of representative measures.)

A brief developmental and medical history of the child or adolescent should be obtained to determine whether any medical factors might be associated with the development or maintenance of the CP behaviors and whether the youth's early temperament may have contributed to the development of a coercive style of parent-child interaction. There are a number of standardized ratings of temperament that may have utility in assessing youths with CP (Frick, 2004; Frick & Morris, 2004), such as the Children's Behavior Questionnaire (Rothbart & Jones, 1998).

One class of potentially important correlates to severe CP is specific cognitive deficits and learning styles. As discussed previously, because deficits in intelligence, especially verbal intelligence, have been associated with CP, a standard intellectual evaluation should be included as part of most assessment batteries for CP. There are also computerized tasks developed to assess the characteristic learning style of many youths with CP (e.g., heightened sensitivity to rewards compared to punishments). However, some major limitations in the development of these tasks make their usefulness in many clinical assessments somewhat limited at the present time (see Frick & Loney, 2000, for a review). There are also research-based measures, typically involving a child or adolescent being provided a hypothetical vignette of a social situation and asked to state how he or she would respond if the situation was real, that assess several deficits in social cognition that have been associated with CP, such as a hostile attributional bias. Examples include the Intention-Cue Detection Task, the Problem-Solving Measure for Conflict, and the WALLY Game (Conduct Problems Prevention Research Group, 1999; Dodge & Coie, 1987; Webster-Stratton & Lindsay, 1999). Although these measures are also not without limitations in their clinical usefulness (Frick & Loney, 2000), interventions for the deficits that are assessed by these measures are part of many treatment programs for CP, and, therefore, the information they provide can be

useful in treatment planning (Lochman & Wells, 1996). The recently developed Social-Cognitive Assessment Profile (J. N. Hughes, Meehan, & Cavell, 2004) shows promise as a brief (15 to 20 min), clinically useful interview with elementary school age children, designed to assess social-cognitive deficits associated with CP.

Parenting practices have been assessed through clinical interviews, behavioral observation of parent-child interactions, and parent and youth report on behavior rating scales. As noted earlier, direct behavioral observation has long been a critical component of the assessment of youths with CP and their families, both for delineating specific patterns of maladaptive parent-child interaction and for assessing change in those interactions as a function of treatment. Observational data can be compared with data gathered via other methods to assist the clinician in determining whether the focus of treatment should be on the parent-child interaction or on parental perceptual or personal adjustment issues. For example, congruence between observational data and a parent-completed behavior rating scale would be consistent with the former focus, whereas normal levels of youth behavior in the observed interaction might suggest that the focus of intervention be on parental perceptual issues. The observation procedures and coding systems described previously for assessing CP in the context of parent-child interactions (e.g., BCS, DPICS-II) also provide important information concerning parent behavior.

Several questionnaires have been specifically designed to assess parenting practices. These questionnaires may be potentially quite useful as adjuncts to behavioral observations or to assess parental behaviors that either occur infrequently or that are otherwise difficult to observe (e.g., physical discipline, parental monitoring practices) and to measure the effects of parent management training interventions. Examples include the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) and the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996), both of which have been shown to be sensitive to intervention effects (e.g., August, Lee, Bloomquist, Realmuto, & Hektner, 2003; Feinfield & Baker, 2004; Sanders, Markie-Dadds, Tully, & Bor, 2000). Some measures focus not on the parental behavior itself but on parents' view of their ability to fulfill the parenting role (e.g., satisfaction, self-efficacy, and locus of control with the parenting role); these include the Parenting Sense of Competence Scale (as adapted by Johnston & Mash, 1989) and the Parental Locus of Control Scale (Campis, Lyman, & Prentice-Dunn, 1986). Both of these measures have been shown to be sensitive to treatment effects (e.g., Nixon et al., 2003; Roberts et al., 1992).

To assess the extent to which parents' personal and marital adjustment problems may be playing a role in

the child or adolescent's presenting CP, a set of screening procedures that includes brief questions in the initial interviews with the parents and certain parental self-report measures can be utilized. The Beck Depression Inventory-II (Beck, Steer, & Brown, 1996) has been the most frequently employed measure of maternal depression. Parental antisocial behavior can be assessed with structured diagnostic interviews, the Minnesota Multiphasic Personality Inventory, or the Antisocial Behavior Checklist (Zucker & Fitzgerald, 1992), although time considerations may make the first two options less feasible. With respect to substance use, some of the more frequently employed screening instruments that may prove useful in working with parents of youths with CP include the short version of the Michigan Alcoholism Screening Test (Selzer, Vinokur, & van Rooijen, 1975), the Drug Abuse Screening Test (Skinner, 1982), and the Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Finally, parents should be screened for both lifetime and current ADHD if the youth presents with comorbid CP and ADHD. The *DSM-IV* ADHD Rating Scale is a screening device that can be used for this purpose (Murphy & Gordon, 1998).

With respect to marital discord, the Marital Adjustment Test (Locke & Wallace, 1959) and the Dyadic Adjustment Scale (Spanier, 1976) have been the most widely used instruments with parents of children with CP. Two questionnaires are often used to assess general marital conflict: the O'Leary-Porter Scale (Porter & O'Leary, 1980), and the Conflict Tactics Scale-Partner (Strauss, 1979, 1990). Instruments designed to measure parenting-related conflict have also been developed, such as the Parenting Alliance Inventory (Abidin, 1988), Child Rearing Disagreements (Jouriles et al., 1991), and the Parent Problem Checklist (Dadds & Powell, 1991). General measures of stress (e.g., life event scales) and specific measures of parenting-related stress have been employed with parents of youths with CP. Examples of the former include the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978) and the Family Events List (Patterson, 1982). Measures specific to parenting-related stress include Parenting Daily Hassles (Crnic & Greenberg, 1990) and the Parenting Stress Index (Abidin, 1995). The Parenting Stress Index has been extensively employed with parents of children with CP (e.g., Abidin, Jenkins, & McGaughey, 1992) and has been shown to be sensitive to parent management training treatment effects (e.g., Eisenstadt et al., 1993; Webster-Stratton, 1994) and to predict premature termination of treatment for CP (Kazdin, 1990).

As noted previously, children and adolescents with CP frequently have problems with peer interactions (e.g., peer rejection, association with a deviant peer group). If the information from behavioral interviews,

behavior rating scales (e.g., the Social Competence scales of the CBCL/6–18; Achenbach & Rescorla, 2001), or observations indicate that this is a problem area for a particular youth, additional assessment of his or her social skills is necessary. The assessment should examine not only the behavioral aspects of the social skills difficulties, but cognitive and affective dimensions as well. Traditionally, assessment of social skills has involved behavioral observations, sociometric measures, and questionnaires. Bierman and Welsh (1997) provided strategies for the assessment of social relationship problems, and Demaray et al. (1995) reviewed several behavior rating scales for the assessment of social competence. Although a number of strategies have been developed to assess social functioning, some of the measures (e.g., sociometrics) have minimal clinical utility because these data are extremely time consuming to collect (Kamphaus & Frick, 2002). However, a brief (5 to 10 min) observation analogue procedure for assessing young children's CP with peers in a rigged card game (SNAP!; C. Hughes, Cutting, & Dunn, 2001; C. Hughes et al., 2002) shows promise, as it differentiated children with CP from control children and was associated with parent and teacher ratings of CP. Similarly, clinically useful measures to assess associations with a deviant peer group are limited currently to youth or parent report, although a structured observational paradigm has been developed for research purposes that may prove to be adaptable to the clinical setting (e.g., Dishion, Andrews, & Crosby, 1995).

Finally, the youth's broader social ecology is often crucial for understanding the development of CP in many cases. Therefore, it is important to assess such variables as the economic situation of the family, the level of social and community support provided to the youth and his or her family, and other aspects of the youth's social climate (e.g., neighborhood, quality of school, and degree of exposure to violence). For example, the Community Interaction Checklist (Wahler, Leske, & Rogers, 1979), which is a brief interview usually administered on multiple occasions, has been extensively employed in research with children with CP and their families to assess insularity. The Community Interaction Checklist has been shown to be a strong predictor of poor maintenance of the effects of parent management training (e.g., Dumas & Wahler, 1983; Wahler, 1980). The Neighborhood Questionnaire (Greenberg, Lengua, Coie, Pinderhughes, & the Conduct Problems Prevention Research Group, 1999) is a brief parent-report measure to assess the parent's perception of the family's neighborhood in terms of safety, violence, drug traffic, satisfaction, and stability. Things That I Have Seen and Heard (Richters & Martinez, 1990) is an example of an interview that focuses on youths' exposure to violence.

## Summary

CP is associated with a wide variety of risk factors, both within and external to the child. There is a correspondingly large array of measures that have been developed to measure these various factors, although the clinical utility of many of the measures has yet to be demonstrated. Assessment of family-related factors is essential and includes, at a minimum, measurement of parenting practices, parental cognitions about their child and about their parenting, parental adjustment, marital conflict, and parental stress. Although these constructs have most typically been assessed by behavior rating scales, it is imperative to assess parent-child interaction via observational methods whenever possible. There are a number of structured observational analogue tasks that have a successful history of clinical utility and that have been shown to be sensitive to treatment effects (e.g., McMahon & Estes, 1997; Roberts, 2001). Assessment of youths' social-cognitive processing difficulties is beginning to make its way into more applied settings, but assessments of peer rejection processes and association with a deviant peer group that are appropriate for the clinical setting are less well developed.

## Multiple Developmental Pathways to CP

### Research Findings

One final area of research that is critical for understanding children and adolescents with CP has focused on the many different causal pathways through which youths may develop these behaviors, each involving a different constellation of risk factors and each involving somewhat different causal processes (Frick, Cornell, Bodin, et al., 2003; Frick & Morris, 2004; Lahey, Moffitt, & Caspi, 2003; Thornberry & Krohn, 2003). This area of research may be the most important for developing guidelines for assessment for at least two reasons. First, the different developmental mechanisms that are operating for specific subgroups of youth with CP could help to explain some of the differences in the type and severity of CP, the presence of comorbid conditions, and the operation of multiple causal factors (Frick & Ellis, 1999; Frick & Morris, 2004). Second, this area of research suggests that treatments likely need to be individualized and tailored to the youth's specific needs, and this necessitates an adequate assessment to implement such individualized interventions (Frick, 1998, 2001).

The most widely accepted model for delineating distinct pathways in the development of CP distinguishes between childhood-onset and adolescent-onset subtypes of CP. That is, the *DSM-IV-TR* (American

Psychiatric Association, 2000) makes the distinction between youths who begin showing severe CP behaviors before age 10 (i.e., childhood onset) and those who do not show severe CP before age 10 (i.e., adolescent onset). This distinction is supported by a substantial amount of research documenting important differences between these two groups of youths with CP (see Moffitt, 2003, for a review). Specifically, youths in the childhood-onset group show more severe CP in childhood and adolescence and are more likely to continue to show antisocial and criminal behavior into adulthood (Frick & Loney, 1999; Moffitt & Caspi, 2001). More relevant to causal theory, most of the dispositional (e.g., temperamental risk, low intelligence) and contextual (e.g., family dysfunction) correlates that have been associated with CP are more strongly associated with the childhood-onset subtype. In contrast, the youths in the adolescent-onset subtype do not consistently show these same risk factors. If they do differ from other youths, it seems primarily to be in showing greater affiliation with delinquent peers and scoring higher on measures of rebelliousness and authority conflict (Moffitt & Caspi, 2001; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996).

The different characteristics of youths in the two subtypes of CP have led to theoretical models that propose very different causal mechanisms operating across the two groups. For example, Moffitt (1993, 2003) has proposed that youth in the childhood-onset group develop CP behavior through a transactional process involving a difficult and vulnerable child (e.g., impulsive, with verbal deficits, with a difficult temperament) who experiences an inadequate rearing environment (e.g., poor parental supervision, poor quality schools). This dysfunctional transactional process disrupts the child's socialization, leading to poor social relations with persons both inside (i.e., parents and siblings) and outside (i.e., peers and teachers) the family, which further disrupts the child's socialization. These disruptions lead to enduring vulnerabilities that can negatively affect the child's psychosocial adjustment across multiple developmental stages. In contrast, Moffitt (1993, 2003) viewed youths in the adolescent-onset pathway as showing an exaggeration of the normative developmental process of identity formation that takes place in adolescence. Their engagement in antisocial and delinquent behaviors is conceptualized as a misguided attempt to obtain a subjective sense of maturity and adult status in a way that is maladaptive (e.g., breaking societal norms) but encouraged by an antisocial peer group. Given that their behavior is viewed as an exaggeration of a process specific to the adolescent developmental stage and not due to enduring vulnerabilities, their CP are less likely to persist beyond adolescence. However, they may still have impairments that persist into adulthood due to the consequences of their CP (e.g., a criminal record, drop-

ping out of school, substance abuse; Moffitt & Caspi, 2001).

This distinction between childhood-onset and adolescent-onset trajectories to severe CP has been very influential for delineating different pathways through which youths may develop CP, although it is important to note that clear differences between the pathways are not always found (Lahey et al., 2000) and the applicability of this model to girls requires further testing (Silverthorn & Frick, 1999). However, it clearly illustrates how the same outcome (i.e., serious CP) can come about through very different developmental processes, a concept that developmentalists have labeled equifinality (Cicchetti & Rogosch, 1996). Researchers have begun extending this conceptualization in a number of important ways. Specifically, they have begun to test whether additional distinctions can be made within youths who follow the childhood-onset pathway to (a) differentiate groups based on the severity, type, and stability of CP exhibited; (b) differentiate groups that have distinct vulnerabilities that can make them more difficult to socialize by parents, teachers, and other important socializing agents; and (c) more clearly specify the developmental processes that can be disrupted by the transactional process that takes place between a vulnerable child and a nonoptimal socializing environment.

Specifically, research has identified a subgroup of youths with CP in juvenile forensic facilities (Caputo, Frick, & Brodsky, 1999), outpatient mental health clinics (Christian et al., 1997), and school-based samples (Frick, Bodin, & Barry, 2000) who show high rates of callous and unemotional (CU) traits (e.g., lacking empathy and guilt). Importantly, youths with CP who also show CU traits seem to show a more severe and aggressive pattern of CP behavior (Christian et al. 1997; Frick, Cornell, Barry, Bodin, & Dane, 2003). There is also evidence that the subgroup of CP youth with CU traits exhibits a distinct temperamental style (Frick & Morris, 2004) that is different from the impulsive and emotionally overreactive temperamental style noted earlier as being present in many children with childhood-onset CP. For example, youths with CP who also show CU traits show a preference for novel, exciting, and dangerous activities (Frick et al., 1999; Frick, Cornell, Bodin, et al., 2003) and are less reactive to threatening and emotionally distressing stimuli than other antisocial youths (Blair, 1999; Frick, Cornell, Bodin, et al., 2003; Loney, Frick, Clements, Ellis, & Kerlin, 2003). Additionally, youths with CU traits are less sensitive to cues of punishment, especially when a reward-oriented response set is primed, in both laboratory (Barry et al., 2000; Frick, Cornell, Bodin, et al., 2003) and social situations (Pardini, Lochman, & Frick, 2003).

These characteristics are all consistent with a temperamental style that has been variously labeled as low

fearfulness (Rothbart & Bates, 1998) or low behavioral inhibition (Kagan & Snidman, 1991). Several studies of normally developing children have linked this temperamental style with lower scores on measures of conscience development in both concurrent (Asendorff & Nunner-Winkler, 1992; Kochanska, Gross, Lin, & Nichols, 2002) and prospective (Rothbart, Ahadi, & Hershey, 1994) studies. This temperament could place a young child at risk for missing some of the early precursors to empathetic concern that involve emotional arousal evoked by the misfortune and distress of others (Blair, 1995). Consistent with these theories, youths with CP who exhibit CU traits appear less responsive to typical parental socialization practices than other youths (Oxford, Cavell, & Hughes, 2003; Wootton, Frick, Shelton, & Silverthorn, 1997). They are also less distressed by the negative effects of their behavior on others (Frick et al., 1999; Pardini et al., 2003), are more impaired in their moral reasoning and empathic concern toward others (Blair, 1999; Pardini et al., 2003), and are less able to recognize expressions of sadness in the faces and vocalizations of other youths (Stevens, Charman, & Blair, 2001).

The few studies that have distinguished between youths within the childhood-onset group who differ on the presence of CU traits also provide some clues as to the mechanisms that may be involved in the development of CP in children and adolescents without these traits. As reviewed previously, youths with CP who are not elevated on CU traits are less likely to be aggressive than those who are high on CU traits, and, when they do act aggressively, it is more likely to be reactive in nature (Frick, Cornell, Barry, et al., 2003) and in response to real or perceived provocation by others (Frick, Cornell, Bodin, et al., 2003). Also, antisocial youths who do not show CU traits have CP that is more strongly associated with dysfunctional parenting practices (Oxford et al., 2003; Wootton et al., 1997) and with deficits in verbal intelligence (Loney et al., 1998). Finally, youths with CP who do not show CU exhibit high levels of emotional distress (Frick et al., 1999; Frick, Cornell, Bodin, et al., 2003), are more reactive to the distress of others in social situations (Pardini et al., 2003), and are highly reactive to negative emotional stimuli (Loney et al., 2003).

Overall, these findings suggest that a large number of children and adolescents with CP but without CU traits have problems regulating their emotions (Frick & Morris, 2004). These problems in emotion regulation can lead to very impulsive and unplanned aggressive and antisocial acts for which the child or adolescent may be remorseful afterwards but still may have difficulty controlling in the future (Pardini et al., 2003). The problems in emotion regulation can also make a youth particularly susceptible to becoming angry due to perceived provocations from peers leading to violent and aggressive acts within the context of high emo-

tional arousal (Hubbard et al., 2002; Loney et al., 2003).

### Implications for Assessment

The key implication of the preceding material for the assessment of youths with CP is that it is imperative for the clinician to be aware of the various potential developmental pathways to CP. Knowledge of the different pathways can serve as a guide for structuring and conducting the assessment with respect to the CP behaviors themselves, the most likely candidates for comorbid disorders and conditions, and the most clinically salient risk factors. Also, different intervention strategies can be designed for youths in these different pathways (Frick, 1998, 2001).

One of the most critical pieces of information in guiding assessment and perhaps ultimately intervention is the age at which various CP behaviors began, as this provides some indication as to whether the youth may be on the childhood-onset pathway. An important advantage that many structured interviews have over behavior rating scales (and behavioral observations) is that they provide a structured method for assessing when a youth first began showing serious CP, thereby providing an important source of information on the developmental trajectory of the CP behavior. For example, in the Diagnostic Interview Schedule for Children (Shaffer et al., 2000), any question related to the presence of a CD symptom that is answered affirmatively is followed by questions asking the parent or youth to estimate at what age the first occurrence of the behavior took place. Obviously, such questions can also be integrated into an unstructured interview format as well.

In either case, however, there is always some concern about how accurate the parent or youth is in reporting the timing of specific behaviors. There are three findings from research that can help in interpreting such reports. First, the longer the time frame involved in the retrospective report (e.g., a parent of a 17-year-old reporting on preschool behavior versus a parent of a 6-year-old reporting on preschool behavior), the less accurate the report is likely to be (Green, Loeber, & Lahey, 1991). Second, although a parental report of the exact age of onset may not be very reliable over time, typical variations in years are usually small and the relative rankings within symptoms (e.g., which symptom began first) and within a sample (e.g., which children exhibited the earliest onset of behavior) seem to be fairly stable (Green et al., 1991). As a result, these reports should be viewed as rough estimates of the timing of onset and not as exact dating procedures. Third, there is evidence that combining informants (e.g., such as a parent or youth) or combining sources of information (e.g., self-report and record of police contact), and taking the earliest reported onset from any source, pro-

vides an estimate that shows somewhat greater validity than any single source of information alone (Lahey et al., 1999).

If the youth's history of CP is consistent with the childhood-onset pathway, then additional assessment to examine the extent to which CU traits may also be present is important. The Antisocial Process Screening Device (Frick & Hare, 2001), which is a behavior rating scale completed by parents and teachers, can be used to identify youths with CP who also exhibit CU traits (Christian et al., 1997; Frick, 2000; Frick, O'Brien, Wootton, & McBurnett, 1994). If the presenting child is preschool-age, then one assessment goal is to attempt to determine the likelihood that the child's behavior is indicative of the childhood-onset pathway or is a less serious manifestation of CP. Although there are no clear-cut algorithms for making this determination, a broad assessment of overall risk is called for (see Wakschlag & Danis, 2004). Also, a more extensive assessment of noncompliance is warranted with preschool-age children, given its centrality to early CP and its amenability to intervention at that age (McMahon & Forehand, 2003).

Finally, it is important to reiterate that much of the current knowledge about developmental pathways to CP has been based on longitudinal samples of boys. Many questions about the onset and development of CP behavior in girls remain unanswered (Silverthorn & Frick, 1999). This, of course, has implications for the assessment (and treatment) of girls with CP. At present, with few exceptions (e.g., relational aggression), there is a paucity of information to guide the development of evidence-based assessment of CP in girls.

There is even less information with respect to evidence-based assessment of CP with ethnically diverse youth. Prinz and Miller (1991) noted that, in general, the validity of various methods used to assess CP has not been examined in specific cultural groups. They stress the importance of assuring that assessment methods are interpreted within the cultural context of the child with CP. Furthermore, attempts should be made to insure that informants (e.g., teachers, observers) are relatively free from cultural bias. Others have noted the importance of assessing the acceptability of various intervention procedures (e.g., parenting skills taught in parent training interventions) across different ethnic groups (Forehand & Kotchick, 1996).

### Summary

Knowledge about the multiple developmental pathways of CP is extremely important for assessment practice in that it can guide clinicians in the structure and focus of their assessment. At present, the most well-established pathways are the childhood-onset and adolescent-onset pathways, although others will likely

be identified by future research. Thus, establishing age of onset of CP is a critical and relatively straightforward step in the assessment of youths with CP. Furthermore, determination of the extent to which the child or adolescent also displays CU traits is indicated, given the growing body of evidence that youths with high levels of both CP and CU traits show many distinct risk factors compared to youths with CP who do not also display elevated levels of CU traits. With preschool-age children who are displaying CP, the most critical issue is to determine whether they are in the early stages of the childhood-onset pathway of CP or whether their behavior represents a more temporary developmental perturbation. Finally, because much of the research base concerning developmental pathways of CP has been conducted with boys, the applicability of these pathways to girls is less well established. However, based on accumulating evidence, we recommend that clinicians still use these constructs (albeit cautiously) to guide their assessments of girls with CP until research suggests otherwise. We offer similar recommendations with respect to the assessment of CP in culturally diverse youth.

### Recommendations for Conducting an Evidence-Based Assessment of CP

In this section, we present several recommendations for conducting evidence-based assessment of children and adolescents with CP. Evidence-based assessment is necessarily evolving; as research accumulates to guide these assessments, these recommendations should change to incorporate new findings. Further, as noted throughout this article, there are many areas of assessment for which the research is quite limited, making the scientific basis stronger for some recommendations than others. With these caveats in mind, we hope that the following guidelines will be of practical use to practitioners and researchers as a way of translating the currently available research into practice recommendations and will serve to stimulate further clinically based research in this area.

When a child or adolescent is referred for assessment of CP, the first order of business is to ascertain whether the youth is, in fact, demonstrating significant levels of CP. It is important to rule out the occasional inappropriate referral due to unrealistic parental or teacher expectations. With respect to diagnosis and screening, the primary tasks are to (a) identify the types and severity of the youth's CP and determine the degree and types of impairment associated with them; (b) determine whether the youth is also experiencing significant levels of impairment related to other disorders and associated conditions; (c) determine what risk factors may have led to the development of the youth's CP or contribute to the continuation of these problems;

and (d) determine which developmental pathway is most consistent with the youth's pattern of CP, comorbid conditions, and risk factors.

As noted previously, knowledge concerning the particular developmental pathway that best fits the youth's clinical presentation is key to conducting an evidence-based assessment. This knowledge can provide a set of working hypotheses concerning the nature of the CP behavior, comorbid conditions, and salient risk factors. Determination of the likely developmental pathway will guide the structure and focus of other areas of the assessment. For example, for a youth whose CP appears to onset in adolescence, one would hypothesize based on the available literature that he or she is less likely to be aggressive, to have intellectual deficits, to have temperamental vulnerabilities, and to have comorbid ADHD. However, the youth's association with a deviant peer group, and factors that may contribute to this deviant peer group affiliation (e.g., lack of parental monitoring and supervision), would be especially important to assess for youth in this pathway. In contrast, for a youth whose serious CP began prior to adolescence, one would expect more cognitive and temperamental vulnerabilities, comorbid ADHD, and more serious problems in family functioning. For those youth in this childhood-onset group who do not show CU traits, the cognitive deficits would more likely be verbal deficits, and the temperamental vulnerabilities would more likely be problems regulating emotions, leading to higher levels of anxiety, depression, and aggression involving anger. In contrast, for youths with childhood-onset CP who show high levels of CU traits, the cognitive deficits are more likely to involve a lack of sensitivity to punishment, and the temperamental vulnerabilities are more likely to involve a preference for dangerous and novel activities and a failure to experience many types of emotion (e.g., guilt and empathy). Further, assessing the level and severity of aggressive behavior, especially the presence of instrumental aggression, would be critical for youths in this group.

As most clinicians recognize, people do not often fall neatly into the prototypes that are suggested by research. Therefore, these descriptions are meant to serve as hypotheses around which to organize an evidence-based assessment. Further, to adequately test these hypotheses and determine how well a youth might fit with the prototypical descriptions of these developmental pathways, it is often necessary to conduct a comprehensive assessment. Finally, all of the constructs that are necessary to determine which of these developmental pathways might best describe the youth should be assessed by multiple assessment techniques and by measures that provide information on the youth in multiple contexts, further adding to the comprehensive nature of the assessment.

Therefore, a multistage assessment strategy is typically recommended. At the first stage, developmentally

appropriate, broadband screening instruments (e.g., ASEBA, Behavioral Assessment System for Children—Second Edition) should be employed initially to identify the relevant CP behaviors, as well as likely comorbid conditions. The Antisocial Process Screening Device could also be administered to determine the extent to which the child or adolescent is displaying CU traits. At the second stage, more focused or labor-intensive measures are then administered to provide more detailed information concerning the youth's CP behavior and associated conditions in multiple settings (e.g., home, school) based on the results of this initial assessment. Examples include a structured diagnostic interview (e.g., Diagnostic Interview Schedule for Children), behavior rating scales focused specifically on CP (e.g., Eyberg Child Behavior Inventory or Sutter-Eyberg Student Behavior Inventory—Revised), observational analogues (e.g., Child's Game, Parent's Game, and Clean Up), and parent observation measures (e.g., Parent Daily Report). Also, at this second stage, it is essential that the level of functional impairment or adaptive disability associated with the youth's CP be determined either through interviews or ratings specifically developed to assess level of impairment (e.g., Child and Adolescent Functional Assessment Scale), and it is critical that the age of onset of the youth's CP be established through clinical or structured interviews with the parent(s) or youth. As noted previously, knowledge of the age of onset of CP is important for determining the developmental pathway that is most salient to a particular youth and can be important for establishing the temporal ordering of CP with respect to comorbid disorders. At the third stage, an array of risk factors needs to be assessed, guided by the information obtained at the first stages of assessment as to the most likely developmental pathway that the youth may be following and guided by the prototypical descriptions of these pathways provided earlier.

These recommendations are influenced by a number of issues related to the developmental level of the child. First, the issue of whether the youth's CP represents a clinically significant phenomenon or is a temporary developmental perturbation is especially salient for preschool-age children and for adolescents. Research suggests that, in both of these developmental stages, some level of CP behavior is normative (Keenan et al., 1998; Moffitt, 1993). Second, youths generally do not become reliable reporters of their CP behaviors until approximately 9 years of age. Thus, the reliance on self-report in the assessment battery may be more limited in the assessment of very young children. Third, with preschool-age children, assessment of language functioning and noncompliance is particularly important, with the use of structured laboratory observation analogues of parent-child interaction being important for the assessment of child noncompliance. Fourth, the number and breadth of the salient do-

mains of risk tend to increase with the youth's age as a result of the broader social milieu in which they function. Thus, whereas assessment of the youth's functioning in the family context is important across all ages, assessments of school and peer contexts become increasingly important in middle childhood and adolescence.

With respect to assessing CP in girls, there is a relative dearth of information to guide clinicians in gender-specific issues related to CP, with two exceptions. A measure of relational aggression should be included in clinical or research settings that include girls with CP. Also, because girls with CP appear to be at increased risk for presenting with comorbid anxiety and depression, careful assessment of such conditions is especially warranted. Fortunately, there has been a recent proliferation of research concerning girls and CP (e.g., Moretti, Odgers, & Jackson, 2004; Pepler, Madson, Webster, & Levene, 2005; Putallaz & Bierman, 2004; Silverthorn & Frick, 1999; Underwood, 2003), which should facilitate the development of evidence-based guidelines that are applicable to girls with CP in the near future.

### Conclusions

In this article, we have summarized four areas of research that we feel have direct and important implications for assessing youths with CP: (a) the heterogeneity in the types and severity of CP, (b) the presence of multiple comorbid conditions, (c) the multiple risk factors associated with CP, and (d) the multiple developmental pathways to CP. For each of these domains, we discussed the implications for assessment, and we presented examples of specific measures that can aid in assessments. We also provided recommendations for evidence-based assessment of CP based on this research. In this final section of the article, we identify (a) some overarching issues in applying this knowledge to clinical assessments and (b) areas that we believe are in greatest need of attention for advancing evidence-based assessments of CP.

We have emphasized throughout this article that an adequate assessment of a youth with CP must make use of multiple methods (e.g., behavior rating scales, observation) completed by multiple informants (parents, teacher, youth) concerning multiple aspects of the child or adolescent's adjustment (e.g., CP, anxiety, learning problems) in multiple settings (e.g., home, school; Kamphaus & Frick, 2002; McMahon & Estes, 1997). However, because of issues of time, expense, and practicality, how best to acquire and interpret this large array of information become important issues. As described in the previous section on guidelines for evidence-based assessments, a multistage or "multiple-gating" approach to assessment may prove to be

cost-effective for conducting such comprehensive assessments (McMahon & Estes, 1997). However, once these many pieces of assessment information are collected, there are few guidelines available to guide clinicians as to how to integrate and synthesize these multiple pieces of information to make important clinical decisions at each stage of the assessment process (Johnston & Murray, 2003). This endeavor is made more complicated by the fact that information from different informants (Achenbach, McConaughy, & Howell, 1987) and from different methods (Barkley, 1991) often show only modest correlations with each other. As a result, after collecting multiple sources of information on a youth's adjustment, the assessor often must make sense out of an array of conflicting information.

More clinically oriented strategies for integrating and interpreting information from comprehensive assessments such as the ones described in this article for youths with CP are presented in Breen and Altepeter (1990), Kamphaus and Frick (2002), McMahon and Forehand (2003), Sanders and Lawton (1993), and Wakschlag and Danis (2004). The continued development and refinement of the ASEBA family of instruments has been particularly noteworthy for its emphasis on integrating and interpreting data from parents, teachers, youths, direct observations, and clinical interviews (Achenbach & Rescorla, 2000, 2001). Others have suggested that incorporation of a functional analytic approach into more traditional assessment practices will facilitate integration of information from multiple sources and the selection of appropriate treatments (e.g., Reitman & Hupp, 2003; Scotti, Morris, McNeil, & Hawkins, 1996). Such functional analytic approaches are quite compatible with the research on the different developmental pathways to CP by emphasizing the need to understand the specific causal processes that led to or have maintained the CP for each child or adolescent to guide more individualized interventions. Regardless of approach, much more research is needed to guide this process of integrating data from comprehensive assessments.

Another issue that requires further attention is the great need to enhance the clinical utility of evidence-based assessment tools (Frick, 2000; Hodges, 2004). As noted throughout this article, many of the recommended assessment measures have been developed and employed in research, as opposed to applied, settings. Progress toward the development of brief, clinically useful assessment methods has occurred, but in a limited way. On one front, there have been attempts to simplify well-validated but complex observational systems such as the DPICS-II and the BCS. On another front has been the development of structured laboratory tasks to assess the child or adolescent's behavior under standardized conditions (Frick & Loney, 2000). Especially encouraging have been the

attempts made to develop methods for assessing covert types of CP behavior (e.g., Hinshaw et al., 1992; Kolko et al., 1991). Although the clinical utility of these methods has yet to be demonstrated, clinicians now at least have a number of brief assessment methods with some empirical support from which to choose.

There is still somewhat of a disconnection between assessment concerning case conceptualization and treatment planning, on the one hand, and the availability of evidence-based interventions that map onto those assessment findings. For example, interventions for youth who are engaging primarily in covert forms of CP (e.g., stealing, fire setting) are much less developed than those for more overt types of CP such as noncompliance and aggression (McMahon et al., in press). Similarly, subtype-specific interventions for reactive and proactive aggression, for relational aggression (e.g., Leff, Angelucci, Grabowski, & Weil, 2004; Levene, Walsh, Augimeri, & Pepler, 2004), and for the treatment of youths with and without CU traits (e.g., Frick, 1998, 2001) are in relatively early stages of development. On the other hand, high levels of noncompliance in a preschool-age child suggest selection of one of several well-validated parent management training interventions.

Another area that requires additional investigation is testing the sensitivity of measures to change. Much of the applications of research to the assessment process has focused on making diagnostic decisions (e.g., determining whether CP should be the primary source of concern and whether it is severe and impairing enough to warrant treatment) and on treatment planning (e.g., determine what types of treatment may be needed by the child). However, an important third goal of the assessment process is intervention monitoring and evaluating treatment outcome. Evidence-based assessments should provide a means for testing whether interventions have brought about meaningful changes in the child or adolescent's adjustment, either for better or worse (i.e., an iatrogenic effect). As noted throughout this article, many behavior rating scales and observational measures have demonstrated sensitivity to intervention outcomes. Unfortunately, there is very little evidence to date of the successful use of assessment measures to monitor the effects of *ongoing* intervention for CP. One exception to this is the Child's Game-Parent's Game structured observational analogue employed by McMahon and Forehand (2003) in their parent management training program for young oppositional children. This analogue is employed repeatedly throughout the course of treatment, not only to monitor progress, but to determine whether the parent has met specific behavioral performance criteria necessary for progression to the next step of the parent training program.

An assessment domain that is related to outcome evaluation is satisfaction with treatment. This domain,

which is one form of social validity, has been assessed in terms of satisfaction with the outcome of treatment, therapists, treatment procedures, and teaching format (McMahon & Forehand, 1983). At present, no single consumer satisfaction measure is appropriate for use with all types of interventions for children with CP and their families. In fact, most assessments of treatment satisfaction have focused on parents involved in parent management training interventions, although teachers have occasionally been assessed. The children and adolescents themselves have rarely been asked to evaluate their satisfaction with treatment, with the exception of some evaluations of multisystemic therapy with adolescents (Henggeler et al., 1999). The Therapy Attitude Inventory (Brestan, Jacobs, Rayfield, & Eyberg, 1999; Eyberg, 1993) and the Parent's Consumer Satisfaction Questionnaire (McMahon & Forehand, 2003; McMahon, Tiedemann, Forehand, & Griest, 1984) are examples of measures designed to evaluate parental satisfaction with parent management training. One area for future research is the development and evaluation of similar satisfaction measures for other interventions employed with youths who show CP.

There are several important issues involved in developing measures suitable for treatment monitoring and outcome evaluation (McMahon & Metzler, 1998). First, the way questions on an interview or rating scale are framed could affect its sensitivity to change. For example, the response scale on a parent-report behavior rating scale may be too general (e.g., "never" vs. "sometimes" vs. "always") or the time interval for reporting the frequency of a parent behavior (e.g., the past 6 months) may not be discrete enough to detect changes brought about by treatment. Second, the degree to which the behaviors measured in assessment match the behaviors targeted in intervention can greatly affect sensitivity to change. For example, if major parenting constructs addressed by an intervention (e.g., limit setting, positive reinforcement, monitoring) are measured weakly or not at all in the assessment, then changes in these constructs as a function of intervention are not likely to be captured. Finally, assessment-by-intervention interactions may occur. For example, as a function of intervention, parents may learn to become more effective monitors of their youth's behavior. As a consequence, they may become more aware of their children's CP behaviors. Comparison of parental reports of their child's behavior prior to and after the intervention may actually suggest that parents perceive deterioration in their children's behavior (i.e., a false "iatrogenic" effect), when in reality the parents have simply become more accurate reporters of such behavior (Dishion & McMahon, 1998).

The final issue for advancing evidence-based assessment is the need to focus assessment around the emerging research on the different developmental pathways to CP. As noted previously, this area of re-

search may be the most important for understanding youths with CP because it could explain many of the variations in severity, the multiple co-occurring conditions, and the many different risk factors that have been associated with CP. This research could also be very important for designing more individualized treatments for youths with CP, especially older children and adolescents with more severe antisocial behaviors (Frick, 1998, 2001). However, for this research to be translated into practice, it is critical that better assessment methods for reliably and validly designating youths in these pathways be developed. Further, the different causal processes and developmental mechanisms (e.g., lack of empathy and guilt, poor emotion regulation) that may be involved in the different pathways need to be assessed, and this typically involves translating measures that have been used in developmental research into forms that are appropriate for clinical practice (Frick & Morris, 2004; Lahey, 2004). This is perhaps the best illustration of the role that evidence-based assessment can play in translating research into practice.

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