Perspectives on oppositional defiant disorder, conduct disorder, and psychopathic features

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This paper presents a few perspectives on oppositional defiant disorder (ODD), conduct disorder (CD), and early forms of psychopathy. The developmental changes and stability of each, and the interrelationship between the three conditions are reviewed, and correlates and predictors are highlighted. The paper also examines effective interventions for each of the three conditions and makes recommendations for future research. **Keywords**: Oppositional defiant disorder, conduct disorder, psychopathy, development, prevention, treatment.

Oppositional defiant disorder (ODD), conduct disorder (CD), and early forms of psychopathy continue to be perplexing problems in juveniles (and adults) that pose many questions for researchers and practitioners. This brief paper represents our perspective on several recent advances in the field as well as issues that still need to be resolved. We will partly draw from our earlier reviews on ODD and CD (Burke, Loeber, & Birmaher, 2002; Loeber, Burke, Lahey, Winters, & Zera, 2000), and psychopathic features in children and adolescents (Pardini & Loeber, 2008, which is an introduction to a special issue on this topic). We will use the term psychopathic features, which is the term we prefer over psychopathy because its full-fledged presence is usually not manifest yet in childhood or adolescence.

ODD reflects ‘a pattern of negativistic, defiant, disobedient and hostile behavior towards authority figures’, while the essential feature of CD is a ‘repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated’ (American Psychiatric Association (APA), 1994). In contrast, psychopathic features do not constitute a diagnosis and include the interpersonal features of manipulativeness, deceitfulness, superficial charm, and grandiosity, while affective characteristics include shallow affect, a lack of empathy, guilt, and remorse, and a failure to accept responsibility for antisocial acts (Pardini, Lochman, & Frick, 2003).

There is a long research tradition on ODD and CD, and a more recent history of research on psychopathic features. Scholars have pointed out that other aspects of psychopathy often co-occurred with ODD and CD and increased the prognostic significance of later outcomes. Initially, the search for these co-markers was sought in attention deficit hyperactivity disorder (ADHD) (American Psychiatric Association (APA), 1994), with research showing that the most seriously affected youth scored both high on early antisocial acts and symptoms of ADHD (or its former diagnosis of ADD; e.g., Loeber et al., 2000). However, once more longitudinal research data became available and once better statistical controls were introduced, it became evident that ADHD (or its pattern of symptoms) did not consistently predict later CD or serious forms of delinquency if prior CD, ODD or delinquency had been taken into account (Lahey, McBurnett, & Loeber, 2000; Loeber et al., 2000). Emerging evidence indicates that ODD not only acts as a precursor to CD and antisocial behavior, but also predicts mood disorders and anxiety, and explains previously observed links between CD and these disorders (Boylan, Vaillancourt, Boyle, & Szatmari, 2007; Burke, Loeber, Lahey, & Rathouz, 2005; Nock, Kazdin, Hiripi, & Kessler, 2007).

In recent years researchers have argued that the interpersonal and affective features of psychopathy contain unique information that is not contained in ODD and CD symptoms (or for that matter in ADHD symptoms), that these features are represented in a proportion of youth who qualify for ODD and/or CD, and that the psychopathic features have additional prognostic value (Frick, Kimonis, Dandreaux, & Farell, 2003; Pardini, Obradović, & Loeber, 2006). Thus, researchers started to collect data to show that psychopathy in adulthood could have similar antecedents in childhood and that the early features of psychopathy could help to discriminate between youth at different levels of risk of becoming antisocial later (Pardini & Loeber, 2007).

A critical question is whether early psychopathic features are distinct from symptoms of CD, ODD, and ADHD. An increasing number of factor analytic studies indicate that the entities constitute separate factors in boys and girls (e.g., Dadds, Fraser, Frost, & Hawes, 2005; Frick, Bodin, & Barry, 2000; Loeber, Pardini, Stouthamer-Loeber, Hipwell, & Sembower, in press; Pardini et al., 2006), with the understanding that the affective features of psychopathy are often labeled callous-unemotional traits in these studies.
Importantly, the factor analytic studies show that early psychopathic features are a distinct factor in boys and girls even though psychopathy in adulthood and the adult diagnosis of antisocial personality disorder (which carries some symptoms of psychopathy) are less common in females than in males.

The evidence to date suggests that psychopathic features can be present in childhood and adolescence, and that there is homotypic continuity in the early features of psychopathy which can be correlated with measures of psychopathy in adulthood (Burke, Loeber, & Lahey, 2007; Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007). This means that there is an increasing need to include early psychopathic features as an element in models of the development of ODD and CD, as well as in the evolution of antisocial personality disorder (APD) and psychopathy in adulthood. However, several key issues still need to be addressed. For example, are the emotional aspects of early psychopathy crucial to the development of severe antisocial behavior, or are the interpersonal aspects of early psychopathy driving serious antisocial outcomes? To what extent are the conditions that foster early psychopathic features different from conditions that foster symptoms of ODD or CD? Answers to these questions can be important building blocks for improved preventive and remedial interventions. The next sections address these and other questions.

Oppositional defiant disorder

ODD is one of the most common disorders among children in clinical populations (Kazdin, 1995), is associated with significant caregiver strain (Bussing et al., 2003), and is particularly challenging to parent behavior (Burke, Pardini, & Loeber, in press). ODD has generally been regarded as relatively benign in comparison to other disorders, in particular being described as a ‘milder form’ of conduct disorder (CD; Rey et al., 1988).

A comprehensive review of the literature by Boylan and colleagues (2007) found that the prevalence of ODD reported in community samples ranged from 2.6% to 15.6%, and in clinical samples from 28% to 65%. Evidence suggests that although boys show higher prevalence rates than girls prior to adolescence, during adolescence boys and girls show equal rates of ODD (Boylan et al., 2007). On the other hand, even though young boys and girls have been found to show equivalent levels of externalizing behaviors and verbal aggression, boys showed greater levels of hitting and destruction (Webster-Stratton, 1996a). Thus, observed gender differences in child disruptive behavior may be confounded by the nature of the behaviors used to assess the disorders, as well as observer biases and gender-based expectations regarding the more conspicuous child behaviors as opposed to the less prominent ones.

Development. ODD is described in the DSM-IV (APA, 1994) as having an onset typically before 8 years of age. There is evidence that ODD can be distinguished from normative child problem behaviors among preschool children in both clinical (Keenan & Wakschlag, 2004) and community (Lavigne et al., 1994) samples. Preschool boys with ODD (with or without comorbid ADHD) show similar neuropsychological deficits as those observed in older children with disruptive behavior disorders (Speltz, DeKlyen, Calderon, Greenberg, & Fisher, 1999a).

The core features of ODD, oppositional behavior and negative emotionality, may be observable well before preschool, and are commonly measured as domains of temperament (Sanson & Prior, 1999; Wakschlag et al., 2007). Given that ODD has an onset in early childhood, and is distinguishable from typical child behavior as early as preschool, it is not clear if and where distinctions between ODD and early child temperament may be drawn. It is possible that these measures of temperament and behavioral measures of ODD are tapping the same construct, or that measures of temperament reflect precursors to the development of the behaviors of ODD. Keenan and Shaw (2003) describe continuity across temperament and disruptive behavior, with emotional dysregulation serving to drive the manifestations of these features from infancy forward. In their model, and also in the transactional model of Greene and colleagues (Greene & Doyle, 2000; Greene, Ablong, & Goring, 2003), parenting and other environmental factors mediate the nature and severity of problems arising from individual differences in emotional regulation. Noteworthy, given recent findings on links between ODD and depression (reviewed below), are Hagekull’s (1994) findings that a temperament-based measure of negative emotionality predicted both internalizing and externalizing disorder at four years, in contrast to measures of impulsivity and activity, which predicted externalizing behaviors alone. Unfortunately, on the whole, insufficient empirical evidence has accrued to clarify the continuities between temperament and ODD during early development.

Once present, ODD shows moderate to high stability over time (Cohen, Cohen, & Brook, 1993). Behavioral problems observed in preschool are strong predictors of later psychopathology (Campbell, 1991; Speltz, McClellan, DeKlyen, & Jones, 1999b). In a clinical sample of boys assessed annually between the ages of 7 and 17, although moderate year to year stability of ODD was noted, fluctuations between ODD, CD and neither disorder were also seen. Given a diagnosis of ODD at one year, criteria for ODD were met again in the following year 36% of the time; criteria for CD were met less frequently (27% of the time), and criteria for neither disorder were met 37% of the time (Burke, in press).
ODD is a significant risk factor for CD (Burke et al., 2005), but only a portion of children with ODD go on to develop CD. Persistent physical fighting, among boys with ODD, is a strong risk marker for progression to CD (Loeber et al., 2000), and certain environmental factors, such as lower SES (Greene et al., 2002) or higher parental hostility (Kolko, Dorn, Bukstein, & Burke, 2008, help to distinguish children with ODD and CD from children with ODD alone. However, the two disorders typically are found to share more environmental commonalities than differences in terms of risk factors, and further research is necessary to improve the prediction of those children with ODD who will progress to CD.

ODD has been found to differ from CD in terms of comorbidity with other disorders (Boylan et al., 2007; Burke et al., 2005; Maughan, Rowe, Messer, Goodman, & Meltzer, 2004). Mounting evidence suggests that rather than simply a benign, milder form of CD, ODD may play a key role in the development not only of later antisocial behavior, but also the internalizing disorders. In a clinic sample of boys assessed annually between the ages of 7 to 17, ODD symptoms predicted year to year increases in symptoms of depression, anxiety and CD. Only ADHD symptoms were predictive of ODD symptoms (Burke et al., 2005). Oppositionality predicted depression in a community sample of boys and girls, whereas delinquency was not predictive of depression after accounting for negative life events (Rowe, Maughan, & Eley, 2006). In the National Comorbidity Survey Replication, a nationally representative sample of adults using retrospective recall, ODD was found to have preceded mood, anxiety and externalizing disorders, but not ADHD (Nock et al., 2007).

Dimensions among ODD symptoms may help to clarify these links to internalizing disorders. Among the symptoms of ODD assessed in a clinical sample of boys, those that reflect negative affect predicted increases in depression but not CD symptoms. In contrast, symptoms reflecting oppositional behavior did not predict depression symptoms, but did predict CD symptoms (Burke, in press). These findings are consonant with Hagekull’s (1994) temperament-based measures of negative affect as predictive of internalizing disorder. Further research is necessary to determine which sets of items best measure negative affect versus oppositionality within ODD, and whether additional symptoms might improve both the measurement of negative affect and the prediction to depression and other internalizing disorders.

**Conduct disorder**

Prevalence rates of CD in community samples have been found to range from 1.8% to 16.0% for boys, and 0.8% to 9.2% for girls (Loeber et al., 2000). In contrast to ODD, gender differences appear to remain consistent over development. CD is established as part of a diagnostic progression in severity of antisocial behavior from ODD to CD and then APD. If criteria for CD are met, a diagnosis of ODD cannot also be assigned (APA, 1994). Because of conceptual and diagnostic overlap, considerable discussion has occurred regarding whether ODD and CD should be maintained as separate conditions or not. However, evidence regarding the development of psychopathology over time illustrates that the majority of children with ODD do not go on to develop CD (Loeber et al., 2000; Rowe, Maughan, Pickles, Costello, & Angold, 2002). Also, despite the fact that in clinical samples, very high proportions of children with CD also meet criteria for ODD (Biederman, et al., 1996; Burke, in press; Greene et al., 2002; Kolko et al., 2007; Lahey et al., 1995), population-based samples reveal large proportions of children with CD who do not meet the criteria for ODD (Lahey et al., 2000; Maughan et al., 2004; Rowe et al., 2002; Simonoff et al., 1997).

Factor analytic studies have repeatedly shown that ODD and CD symptoms load on separate factors (Burns, Walsh, Owen, & Snell, 1997; Burns, Walsh, Patterson et al., 1997; Hartman et al., 2001). ODD symptoms also differ from CD symptoms in important ways in their reciprocal influence with parenting behaviors (Burke et al., in press), and in terms of their association with comorbid psychopathology (Burke, in press; Burke et al., 2005) in ways that indicate that allowing both diagnoses of ODD and CD to be assigned would convey important clinical information. Further, it is likely that research on distinctions between ODD and CD has been impeded by the prohibition against assigning both diagnoses (Greene et al., 2002).
although the direction of influence between parenting and CD is not entirely clear (Burke et al., in press).

A number of genetic studies have found that genetic factors and unique environmental factors explain roughly equivalent proportions of variance in CD or antisocial behavior generally, whereas shared environmental factors explain smaller, but still significant proportions of the variance (e.g. Maes, Silberg, Neale, & Eaves, 2007; Rhee & Waldman, 2002).

The stability of CD is moderate to high. Rates of persistence over several years following diagnosis have been estimated between 44% (Offord et al., 1992) to 88% (Lahey et al., 1995). Wave to wave stability for CD from childhood through adolescence in a clinical sample of boys was 56% (Burke, in press). The course of CD symptoms is influenced by a wide array of factors in biological, child functional and psychosocial domains (Burke, Loeber, & Birmaher, 2002).

CD among boys aged 7 to 12 is a strong predictor of APD (Lahey, Pelham, Loney, Lee, & Wilcutt, 2005), especially among boys from low SES families of origin. On the other hand, the majority of children with CD will not progress to APD (Lahey et al., 2005). CD symptoms are also predictive of psychopathy in adulthood, especially the more antisocial behavioral features (Burke et al., 2007).

Other negative outcomes for those with conduct problems in adolescence, serious problems with adjustment have been observed, whether or not they met criteria for APD (Robins, 1966; Robins & Price, 1991; Zoccolillo, Pickles, Quinton, & Rutter, 1992), including outcomes of substance use, school dropout and unwanted pregnancy among both women (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996) and men (Capaldi & Stoolmiller, 1999). Convictions (Harrington, Fudge, Rutter, Pickles, & Hill, 1991) and increased injuries, illnesses (Farrington, 1995) and mortality (Kratzer & Hodgins, 1997) have also been found to be higher for those with conduct problems in childhood or adolescence.

Prevention and treatment of ODD and CD. Interventions for ODD and CD are typically not specific to either disorder, but more generally to conduct problems or antisocial behavior in children and adolescents. A number of reviews provide a comprehensive overview of the current literature on such interventions (Brestan & Eyberg, 1998; Burke, 2007; Nock, 2003; Pardini, 2008). The most effective treatment strategies employ cognitive behavioral strategies and target multiple levels, most commonly child and parent, but at times including family, peers, and school. Parent management training (PMT) is a common component for treatments across childhood to adolescents, and is not specific to ODD.

Treatments that focus more on the early development of behavioral problems, and those more associated with ODD, include Parent–Child Interaction Training (Eyberg, Boggs, & Algina, 1995), which uses direct observations of parent–child interactions, with covert feedback provided directly to parents. Webster-Stratton’s (1996b) Incredible Years treatment program is well established as an effective intervention. It targets young children with behavioral problems using PMT strategies. Greenberg’s PATHS program (Greenberg, Kusche, Cook, & Quamma, 1995) is also intended for early childhood, but is a universal prevention strategy designed for elementary school settings.

Another program designed for childhood, but targeting children who come to the attention of police or show high levels of behaviors more typical of CD, is the SNAP Program (Augimeri, Farrington, Koegi, & Day, 2007). The program uses cognitive behavioral strategies delivered in a group format to parents and children, and has developed separate treatment models for boys and girls.

Given that ODD symptoms are often also present in children with CD, it may be necessary to ensure that children with CD are adequately assessed for the presence of symptoms of negative affect, CD treatments including more specific components to address these difficulties and associated impairments. Furthermore, given emerging evidence that symptoms of negative affect within ODD may play a significant role in the development of internalizing child psychopathology (Burke, in press), a strategy of greater focus on these symptoms in the treatment of ODD may provide early intervention against the development of depressive disorders and other internalizing psychopathology, as well as inhibiting the progression of disruptive behavior. Lochman’s (Lochman & Lenhart, 1993) Anger Coping intervention strategy includes elements targeting affective features of disruptive behavior. Such strategies may need to be expanded and given a more prominent role across interventions for ODD.

Psychopathic features

Studies have begun identifying features in children and adolescents that are congruent with adult psychopathy in an attempt to identify a more homogeneous group of conduct disordered youth who are at greatest risk for developing severe and persistent forms of antisocial behavior (Frick & Marsee, 2006; Pardini & Loeber, 2007; Salekin & Frick, 2005). While adult psychopathy is a complex construct, downward extensions to juveniles have focused on the interpersonal and affective features of the disorder, because evidence suggests that these features may not be adequately captured by symptoms of CD, ODD, or ADHD as defined in the DSM-IV (Dadds et al., 2005; Frick et al., 2000; Pardini et al., 2006). The methods currently used to assess psychopathic features in children tend to differ across development, with parent and teacher report scales being...
used most frequently with children (Frick & Hare, 2002; Lynam, 1997; Pardini et al., 2006), whereas studies on adolescents rely primarily on self-report (Andershed, Kerr, & Stattin, 2002; Boccaccini et al., 2007) or scored structured interviews (Forth, Kossen, & Hare, 2003).

A growing body of evidence suggests that the affective and interpersonal dimensions of psychopathy are associated with early emerging and persistent forms of antisocial behavior. Developmental studies have shown that the early forms of deception, manipulation, empathy and guilt can be reliably measured in children as young as three, and high levels of these characteristics tend to co-occur with early conduct problems (Kochanska & Aksan, 2006; Ostrov, 2006). During the elementary school years, longitudinal evidence shows that the affective features of psychopathy are associated with higher levels of conduct problems and antisocial behavior in children, even after controlling for initial conduct problem severity (Dadds et al., 2005; Frick et al., 2003; Pardini, Lochman, & Powell, 2007). Studies with adolescents indicate that the interpersonal and affective features of psychopathy predict persistent forms of delinquency (Pardini et al., 2006), future recidivism (Boccaccini et al., 2007), and antisocial personality disorder symptoms in young adulthood (Pardini & Loeber, 2008). However, relatively few longitudinal studies have examined whether psychopathic features provide unique information about the developmental course of antisocial behavior above and beyond current DSM-IV criteria for ODD/CD (Moffitt et al., 2008).

Development. Several studies have begun validating the common assertion that psychopathic features are relatively stable from childhood to adolescence (Dadds et al., 2005; Frick et al., 2000; Lynam et al., 2005). Developmental research suggests that early forms of empathy and guilt are relatively stable from age 3 to 4 in normal children (r = .70) and can be differentiated from indicators of early conduct problems (Aksan & Kochanska, 2005). Other investigations have reported high average stability estimates for the interpersonal and affective dimensions of psychopathy across three- (Barry, Barry, Deming, & Lochman, 2008) and four-year periods (Frick et al., 2003) spanning late childhood to early adolescence (within informant intra-class correlations ICCs = .63-.92). Using a longitudinal sample of boys, Obradović and colleagues (Obradović, Pardini, Long, & Loeber, 2007) found that parent report of the interpersonal and affective features of psychopathy was moderately stable from age 8 to 16 (r = .50), although the stability of teacher report for these features across this period was more modest (r = .27). Despite these promising results, longitudinal evidence suggests that psychopathic features in adolescence seem to be more strongly related to the impulsive and antisocial dimension of psychopathy in adulthood when compared to the interpersonal and affective dimension of the disorder (Burke, Loeber, & Lahey, 2007; Lynam et al., 2007). As a result, the continuity of the interpersonal and affective dimensions of psychopathy from adolescence into young adulthood remains unclear.

Many investigators have speculated that the stability of psychopathic features is mainly driven by neurobiological factors (Blair, 2004; Blair, Peschardt, Budhani, Mitchell, & Pine, 2006; Kiehl, 2006). This conceptualization is consistent with twin studies showing that early features of psychopathy are substantially heritable (Larsson, Andershed, & Lichtenstein, 2006; Viding, Blair, Moffitt, & Plomin, 2005). While neurobiological models related to the development of psychopathic features vary, most emphasize dysfunction in the paralimbic brain regions involved in aversive conditioning, passive avoidance learning, the processing of negatively valenced stimuli, and/or the semantic processing of words (for reviews see Blair, 2004; Blair et al., 2006; Kiehl, 2006). Currently, much of the published evidence supporting these neurobiological models in juveniles comes from behavioral performance measures rather than more direct assessments of brain functioning. As a result, studies identifying the neural deficits that are uniquely related to the development of psychopathic features in youth using contemporary neuroimaging methods are still needed.

While neurobiological factors have been increasingly emphasized as a driving force behind the development of psychopathic features, longitudinal evidence indicates that social factors may also be important. For example, longitudinal studies have found that negative parenting practices such as poor parental monitoring, inconsistent discipline, and physical punishment are associated with increases in the affective and interpersonal features of psychopathy in children across time (Frick et al., 2003; Pardini et al., 2007). Similarly, poor parent–child communication in early adolescence (mean age = 13.9) has been associated with chronically elevated levels of psychopathic features across a four-year follow-up (Pardini & Loeber, 2008). Emerging evidence also indicates that specific parenting practices may help buffer children with risky temperaments, such as fearlessness, from developing the affective features of psychopathy. For example, children with low fear seem to be relatively unresponsive to the socializing influence of punishment, which may leave them at risk for developing a callous interpersonal style (Hawes & Dadds, 2007; Pardini, 2006). However, parenting practices that emphasize a warm and nurturing parent–child relationship seem to buffer children with low fear from developing the affective features of psychopathy over time (Kochanska, 1997; Pardini, Lochman, & Powell, 2007). Taken together, these findings suggest that the interaction between social and neurobiological
factors may be important in understanding the early emergence of psychopathic features, as well as changes in these features over time.

**Prevention and treatment.** Given findings suggesting that psychopathic features are relatively stable and seem to predict persistent and serious forms of antisocial behavior, some have wondered whether traditional treatment efforts would be successful with youth who exhibit these features. While a recent review of the literature suggested that psychopathic features in adjudicated adolescents are moderately associated with aggressive behaviors during treatment (r ≈ .30), many of the studies reviewed were not prospective in nature and/or involved treatments of questionable quality (Edens, Skeem, Cruise, & Kauffman, 2001). More recent investigations have produced more promising results regarding the treatment responsiveness of youth with psychopathic features. For example, one investigation found that pre-treatment psychopathic features in adjudicated adolescents did not influence behavioral change over the course of an intensive inpatient treatment program and were not predictive of violent recidivism following discharge from the program (Caldwell, McCormick, Umstead, & Van Rybroek, 2007). Along similar lines, Hawes and Dadds (2007) found that a cognitive-behavior treatment for children with ODD resulted in positive changes in parent-reported callous-unemotional features from pre-treatment to 6-month follow-up (d = .57) and the magnitude of this effect was commensurate to that found for antisocial behavior (d = .62). Another recent investigation found that a multifaceted cognitive-behavioral intervention for 6-11-year-old children with ODD or CD produced significant reductions in teacher-reported callous-unemotional and narcissistic features from pre- to post-treatment (ds = .44 and .47, respectively), and these treatment gains were maintained across a 3-year follow-up period (Kolko et al., in press a). Taken together, this suggests that psychopathic features in children can be reduced through intensive and well-designed interventions, and that psychopathic features in adolescents may not moderate the effectiveness of treatment.

**Implications**

As mentioned in the introduction, this paper presents perspectives on ODD, CD, and psychopathic features rather than a full review of the empirical literature. We argue that ODD, CD, and psychopathic features each have unique information that is relevant for developmental models of disruptive behavior and for the formulation of DSM-V. It remains to be clarified to which degree temperament or other underlying factors drives all three aspects of disruptive behavior (Loeber, Pardini, Stouthamer-Loeber, Hipwell, & Sembower, in press), and it is also not clear which psychosocial predictors of ODD and CD also apply to psychopathic features. This information is crucial for explanatory frameworks of the three conditions, but also may fuel improvements in the assessment, prevention, and treatment for each. The findings that negative affect ODD-symptoms are also relevant for the development of internalizing problems further buttress the notion that longitudinal findings constitute a rationale for future improvement in interventions.

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### Key points

- Oppositional defiant disorder (ODD), conduct disorder (CD) and early psychopathic features are distinct set of behaviors.
- Knowledge of psychopathic features in childhood or adolescence has unique information over and above knowledge of ODD or CD.
- ODD, CD and early psychopathic features are stable, but also show changes over time.
- Treatment interventions are known to reduce ODD and CD, but fewer intervention studies are available that focused on reducing psychopathic features.

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