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# Family Violence and Parent Psychopathology: Implications for Children's Socioemotional Development and Resilience

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Family violence, which refers to child maltreatment and intimate partner violence, is a widespread problem in the United States. In 2009, the most recent year for which figures are available, 702,000 children were found to be victims of maltreatment, including physical, sexual, and psychological abuse, and neglect (U.S. Department of Health and Human Services, 2010). A survey of 16,000 men and women in the United States found that the lifetime prevalence of intimate partner violence was 17% and approximately 1.3 million women and 834,732 men had been the victims of partner violence in the 12 months prior to the survey (Tjaden & Thoennes, 2000). Worldwide, the lifetime prevalence of intimate partner violence ranges from 15 to 71% (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006).

Many victims of partner violence live with children. A Bureau of Justice Statistics Special Report found that between 1993 and 1998, the average number of victims of intimate partner violence who lived with children under the age of 12 was 459,590 (Rennison & Welchans, 2000). Child maltreatment and intimate partner violence co-occur in families (Appel & Holden, 1998; Edleson, 1999; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), with data from a nationally representative sample of American youth showing that 33.9% who had witnessed

intimate partner violence had also been victims of maltreatment in the past year and 56.8% who had ever witnessed intimate partner violence had been victims of maltreatment at some point in their lives (Hamby, Finkelhor, Turner, & Ormrod, 2010). Reviewing data from community and clinical samples, Edleson (1999) estimated that among those who were exposed to one form of family violence (i.e., child maltreatment or partner abuse), 30–60% were exposed to the other form of family violence as well.

Children who are exposed to intimate partner violence and children who are maltreated are at risk for a range of adverse outcomes in childhood and adolescence, including conduct problems, anxiety and depression, cognitive dysfunction, poor school performance, low self-esteem, and difficulties with peers (for reviews, see Holt, Buckley, & Whelan, 2008; Margolin & Gordis, 2000). Thus, child maltreatment and intimate partner violence constitute significant public health problems because of their high prevalence and co-occurrence rates and because of the adverse outcomes for parents and children involved in family violence.

In their efforts to understand the etiology of family violence, researchers in different fields have developed models that call on a subset of potential explanatory variables (Belsky & Vondra, 1989; Parke & Collmer, 1975). For example, psychiatric models of family violence emphasize the role that an individual's rearing history and psychological characteristics (e.g., low impulse control, alcohol and drug problems,

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depression or personality disorders) play in increasing risk for child (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962; Spinetta & Rigler, 1972) or partner abuse (Dutton, 1995). Sociological models of family violence emphasize the degree to which social stressors (e.g., unemployment, poverty) and societal attitudes and values about violence undermine family functioning and are thus implicated in child or partner abuse (Gelles, 1973; Sugarman & Frankel, 1996; Tolan & Guerra, 1998). Finally, the “child effects” model highlights the degree to which the behavior of hard-to-manage children (e.g., premature infants, children with difficult temperaments) elicits harsh and abusive discipline from adults (Hurme, Alanko, Anttila, Juven, & Svedstrom, 2008; Kadushin & Martin, 1981; Wu et al., 2004) or causes disagreements about how to manage children that result in intimate partner violence (Straus, Gelles, & Steinmetz, 1980).

Working from a developmental–ecological framework, Belsky (1980, 1993) proposed that maltreatment occurs as a result of interactions between “contexts of maltreatment.” Although Belsky’s developmental–ecological model was formulated to explain child maltreatment, it can be generalized to other forms of family violence like intimate partner violence. According to the developmental–ecological model, factors that influence whether an individual will be abusive towards a child or an intimate partner operate at and across several levels of the ecology from the most proximal to the most distal. These include the level of the individual (e.g., individual personality or mental illness), the level of the microsystem (i.e., family-level factors including poverty, single parenthood, or unemployment), the level of the exosystem (e.g., community-level violence, unemployment rates, or social cohesion), and the level of the macrosystem (e.g., cultural attitudes to violence, regional policy on family violence).

The developmental–ecological model underscores the fact that family violence is determined by multiple factors and, as Belsky (1993) concluded, there appear to be no necessary or sufficient causes of family violence. Thus, although the focus of this chapter is on the asso-

ciation between mental illness in parents and family violence, I do not advocate the psychiatric model. Rather, as the following review of the literature will demonstrate, it is assumed that family violence has many causes and that the degree to which parents’ psychopathology increases risk for family violence depends on the balance of other potentiating and compensatory factors that may change over time (Cicchetti & Rizley, 1981). Clearly, not all parents with a history of mental disorder are involved in family violence and not all of those involved in family violence have a history of mental disorder. However, a focus on parent psychopathology is worthwhile given the central role that parent personality plays in theories of the determinants of parenting (Belsky & Jaffee, 2005). Personality is what links a parent’s developmental history (e.g., early experience of caregiving) with his or her current functioning as a parent. Personality also influences a range of contextual factors (marital quality, job satisfaction and stability) that increase or decrease risk for family violence (Belsky, 1984).

The goal of this chapter is to review the literature on the association between parent mental illness and two forms of family violence: violence against an intimate partner, referred to as partner violence, and violence against a child, referred to as child maltreatment. Although child maltreatment comprises physical, psychological, and sexual abuse as well as neglect, most of the studies reviewed in this chapter concern child physical abuse and neglect.

A review of the literature on family violence and parent mental illness is merited at this point in time because of the growing use of nationally representative datasets to estimate the co-occurrence of family violence and parent mental illness in the population vs. clinical samples where family violence and parent mental illness may be correlated with a host of other psychosocial risk factors that inflate co-occurrence estimates. Moreover, research based on nationally representative, *longitudinal* samples can address questions regarding the temporal association between mental illness and family violence. The temporal nature of these data has allowed researchers to explore whether parent mental illness is a predisposing risk factor for

family violence or whether parent mental illness arises from the experience of violence victimization in the family, thus getting at the question of whether family violence occurs because parents are mentally ill or whether mental illness occurs because parents have been victims of violence.

In this chapter, I will review the evidence linking parent mental illness to family violence. I will then review evidence on what accounts for the link between parent mental illness and family violence. Finally, I will discuss the implications for children's well-being of growing up in a home where they are exposed to both family violence and parent mental illness. Despite the risk for poor adjustment associated with family violence and with parent psychopathology, many children who are exposed to such adversities show remarkable resilience over time and across a range of domains of functioning. I will consider the degree to which the *co-occurrence* of parent psychopathology and family violence may decrease the likelihood that children will manifest resilience.

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### **The Prevalence of Psychopathology Among Perpetrators of Partner Violence**

Personality disorders appear in up to 90% of males in domestic violence treatment programs (Craig, 2003) and clinical elevations in passive-aggressive and antisocial personality disorders best predict domestic violence (Dutton, 1994). However, batterers are a diverse group who differ in terms of the frequency and severity of their violence, the extent to which they are violent outside of the family, and the degree to which they are characterized by personality disorder and psychopathology (Dixon & Browne, 2003; Holtzworth-Monroe & Stuart, 1994). In an empirical test of their batterer typology, Holtzworth-Monroe, Meehan, Herron, Rehman, and Stuart (2000) reported that the generally violent antisocial group (16%) were characterized by high levels of psychopathy, substance use and abuse, and involvement in crime. The borderline-dysphoric group (15%) were characterized by

borderline personality organization and high scores on a number of Diagnostic and Statistical Manual (American Psychiatric Association, 2000) Axis I scales including major depression, anxiety, posttraumatic stress disorder, and symptoms of disordered thought. Over a third of the violent men in the sample (36%) corresponded to the family-only group and they were indistinguishable from the nonviolent control group in terms of psychopathology and criminal behavior.

Consistent with the notion that clinically significant psychopathology may characterize only a subset of batterers, Gleason (1997) conducted a review of psychological and social dysfunction among battering men and identified two types of batterers: one group characterized by frequent alcohol abuse, antisocial personality disorder, low intelligence, and criminal behavior and another group characterized by relatively low levels of psychological and social dysfunction.

Data from epidemiological studies of men and women who perpetrate partner violence are consistent with data from clinical samples, showing that perpetrators (men, in most studies) have elevated past-year rates of mood and anxiety disorders, substance use disorders, and antisocial personality disorder (Danielson, Moffitt, Caspi, & Silva, 1998; Eiden, Leonard, & Morrisey, 2001; Feingold, Kerr, & Capaldi, 2008; Magdol et al., 1997). A childhood history of antisocial behavior—and particularly early emerging antisocial behavior—has also been identified consistently as a risk factor for partner violence perpetration (Ehrensaft et al., 2003; Kerr & Capaldi, 2011; Lussier, Farrington, & Moffitt, 2009; Magdol, Moffitt, Caspi, & Silva, 1998; Woodward, Fergusson, & Horwood, 2002), with at least one study finding that male perpetrators were more likely than nonperpetrators to also have a childhood history of any mental health or substance use problem (Magdol et al., 1998). Finally, at least one study has shown that symptoms of depression, poly-drug use, and antisocial personality disorder differentiate male perpetrators from male nonperpetrators more strongly than they differentiate female perpetrators from female nonperpetrators (Magdol et al., 1997).

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## The Prevalence of Psychopathology Among Victims of Partner Violence

In a meta-analysis of the association between intimate partner violence and mental health problems, Golding (1999) reported that women's violence victimization significantly increased the odds of suicidality, posttraumatic stress disorder, and substance use/dependence in samples taken from psychiatric patient settings, battered women's shelters, and emergency rooms. Although Golding (1999) concluded that these results supported a model in which violence victimization was a cause of mental disorder in women, the analyses did not address the possibility that women who were victimized by their partners had a preexisting mental disorder that may have influenced their likelihood of entering abusive relationships.

Although the majority of research on victims of partner violence concerns women, there is a small literature on male victims. Similar to the findings for women, a review of this literature found that men who were victims of intimate partner violence were at increased risk of symptoms of posttraumatic stress, depression, and suicide (Randle & Graham, 2011).

Again, consistent with data from clinical samples, data from epidemiological studies show that male and female victims of partner violence are at increased risk for mood, anxiety, eating, substance use, antisocial personality, and psychotic disorders (Afifi et al., 2009; Bonomi et al., 2006; Carbone-Lopez, Kruttschnitt, & Macmillan, 2006; Coker et al., 2002a; Coker, Smith, & Fadden, 2005; Danielson et al., 1998; Magdol et al., 1997). The past-year prevalence of psychiatric disorders among men and women who have been victims of partner violence ranges from 25 to 66% depending on the severity of the abuse (Afifi et al., 2009; Danielson et al., 1998). As compared with male victims, female victims have been shown to have higher rates of anxiety (Afifi et al., 2009; Magdol et al., 1997) and to have lower rates of disruptive and substance use disorders (Afifi et al., 2009). Findings from community samples suggest that access to social

supports buffer women who experience intimate partner violence from risk of depression and posttraumatic stress symptoms (Beeble, Bybee, Sullivan, & Adams, 2009; Coker et al., 2002b; Escriba-Aguir et al., 2010; Mburia-Mwalili, Clements-Nolle, Lee, Shadley, & Yang, 2010).

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## Why Is Intimate Partner Violence Correlated with Psychopathology?

Research that establishes an association between intimate partner violence and mental illness can be interpreted in at least three ways: (a) mental disorder causes individuals to perpetrate or fall victim to intimate partner violence; (b) the experience of having been abused by an intimate partner increases risk for mental disorder; (c) the association between mental disorder and intimate partner violence is spurious and can be accounted for by a third set of variables (e.g., low socioeconomic status). As longitudinal data on partner violence and mental illness have become available, researchers have begun to exploit the temporal nature of these data to answer questions about whether the link between mental disorder and partner violence reflects social selection (individuals with a history of mental disorder are at increased risk of entering violent relationships), social causation (partner violence causes mental disorder), or a spurious association.

In one longitudinal study of a New Zealand birth cohort, individuals with a history of psychiatric disorder in adolescence were more likely than individuals without such a history to be victims of clinically abusive partner violence—resulting in injury or official intervention—in their mid-twenties (Ehrensaft, Moffitt, & Caspi, 2006). For male victims, a prior history of psychiatric disorder explained why they were subsequently at increased risk for psychiatric disorder. For female victims, however, the risk for psychiatric disorder associated with partner violence remained significant after controlling for psychiatric history (Ehrensaft et al. 2006). Thus, these data indicate that the experience of partner violence is not random—individuals with a history of mental disorder are more likely to enter abusive

relationships than individuals without a history of mental disorder. However, for women at least, being victimized by a partner further increases risk for psychopathology.

Complicating this picture is the fact that most individuals who perpetrate violence against a partner have also been victims of violence (Anderson, 2002; Magdol et al., 1997). Thus, mental health problems may predict violence perpetration because perpetrators have themselves been victims of violence in the past and have developed mental health problems as a consequence. Using data from the National Survey of Families and Households, Anderson (2002) found that depressive symptomatology increased the odds of partner violence perpetration, even controlling for a range of sociodemographic variables and controlling for violence victimization. Thus, individuals who reported symptoms of depression were at increased risk of violence perpetration, even accounting for the fact that they might have been victims of violence in the past. In contrast, the authors detected a spurious association between drug and alcohol problems and violence perpetration. Drug and alcohol problems were associated with the perpetration of partner violence because both stemmed from the experience of having been the victim of violence in the past.

In summary, both clinical and nationally representative samples have established an association between partner violence perpetration, victimization, and mental disorder, although a substantial number of individuals involved in partner violence are not characterized by mental disorder (Holtzworth-Monroe et al., 2000). Longitudinal studies have shown that social selection and social causation are both at play for female victims of partner violence, but that processes of social selection primarily explain why male victims of partner violence have elevated symptoms of mental health problems (Ehrensaft et al., 2006). Moreover, some forms of disorder increase the risk of perpetration, regardless of an individual's history of victimization whereas other forms of disorder appear to be associated with violence perpetration because both stem from a history of victimization (Anderson, 2002).

More longitudinal research is needed to further explore the question of (a) whether psychopathology arises from the experience of partner violence, (b) whether partner violence exacerbates an underlying diathesis for psychopathology, or (c) whether partner violence is a manifestation of stable individual differences as indexed by an individual's history of psychopathology. Finally, relatively little research has explored whether "third variables" such as poverty, single parenthood, or unemployment account for the association between mental disorder and partner violence or whether these factors moderate the relationship such that mental disorders and partner violence are linked only under certain conditions.

### Parental Psychopathology and Child Maltreatment

As is true for studies of mental disorder and intimate partner violence, researchers who study the association between parent mental disorder and child maltreatment have collected data from both clinic samples (e.g., studies of parents on protective service caseloads) as well as from parents in population samples.

*Clinic samples.* State child welfare records indicate that substance abuse is one of the top two problems exhibited by families in 81% of reported cases (Lung & Daro, 1996). Among confirmed cases of child maltreatment, 40% involve the use of alcohol or other drugs by a parent (Children of Alcoholics Foundation Inc, 1996). Crack cocaine has been held responsible by researchers and social workers for skyrocketing child protective service caseloads in the 1980s and early 1990s (Curtis & McCullough, 1993). Children of alcoholics may also be at increased risk of neglect as evidenced by research showing that such children suffer more injuries and poisonings than do children in the general population (Bijur, Kurzon, Overpeck, & Scheidt, 1992).

Substance abuse may influence the course and consequences of child maltreatment. In a comparison of drug and alcohol substance-abusing and non-substance-abusing parents involved in

over 200 child protective cases brought to court in Massachusetts, Murphy et al. (1991) reported that parents with documented substance abuse histories were more likely than other maltreating parents to be repeat offenders with regard to child maltreatment and to have longer histories with child protective services. Parents with substance abuse histories were rated by court investigators as being at higher risk of continuing to maltreat their children, were more likely to reject court-ordered services (71% vs. 39%), and were more likely to eventually lose care and custody of their children (80% vs. 58%). These differences between substance-abusing and non-substance-abusing families remained significant even after controlling for socioeconomic status, as indexed by receipt of welfare benefits. Thus, in families where maltreatment co-occurs with a parent's substance abuse problem, maltreatment is more persistent, parents are more resistant to treatment, and children are more likely to be placed in care.

Although these studies show substantial rates of mental disorder among parents who maltreat their children, they do not clarify whether rates of disorder are significantly higher among these parents than among sociodemographically matched controls. In a study of 53 families who had been reported (and indicated) to child protective services, De Bellis et al. (2001) reported that prevalence rates of lifetime DSM-III and IV diagnoses for any anxiety disorder, any mood disorder, and alcohol and substance abuse/dependence disorders were significantly higher among maltreating mothers compared to sociodemographically similar control mothers. Compared to control mothers, mothers of maltreated children were also more likely to have had a history of violent behavior towards other adult family or community members, although the two groups did not differ with respect to criminal arrests.

Famularo and colleagues (Famularo, Kinscherff, & Fenton, 1992; Famularo, Stone, Barnum, & Wharton, 1986) matched 50 court-referred maltreating parents with 38 parents whose children were inpatients at a general pediatric hospital on age, income, race, and marital status. Maltreating parents were significantly more likely than control parents to meet Research

and Diagnostic Criteria for a lifetime diagnosis of alcoholism (38% vs. 8%) and major depression (28% vs. 8%).

The clinic studies reported earlier have estimated rates of mental disorder among samples of parents on child protective service caseloads. Another approach to studying the link between parent mental disorder and child maltreatment is to estimate the prevalence of maltreatment among parents who are receiving mental health services or who have disclosed illicit drug use. At least four studies have detected elevated rates of physical abuse and neglect among drug users compared to sociodemographically matched controls (Kelley, 1992; McGlade, Ware, & Crawford, 2009; Street, Harrington, Chiang, Cairns, & Ellis, 2004; Wasserman & Leventhal, 1993). For example, Kelley (1992) reported that nearly 60% of the drug-exposed infants in her sample were the subject of subsequent substantiated reports of abuse or neglect compared to just over 8% of the control children. At 11 months of age, all of the control children were still living with their biological mothers in contrast to just over half of the drug-exposed children, 42% of whom had been placed by child protective services in foster care with relatives or others.

Finally, a recent study followed a sample of 999 youth released from juvenile justice facilities in New York. By the time they were 28 years old, 62% of the girls and 17% of the boys had been investigated by child welfare services for allegations of abuse or neglect (Colman, Mitchell-Herzfeld, Kim, & Shady, 2010). Although this study lacked a demographically matched control group of nondelinquents, it bears noting that rates of maltreatment perpetration were higher among female former delinquents than among individuals who themselves have a history of child maltreatment, roughly a third of whom are expected to maltreat their own children (Kaufman & Zigler, 1987).

In summary, when compared to sociodemographically matched controls, the association between child maltreatment and mental disorder (including major depressive, personality, and substance use disorders) is detected (a) in samples where prevalence rates of mental disorder

are assessed in parents referred to child protective services and (b) in samples where the prevalence of child maltreatment is assessed prospectively among mothers who abuse drugs or who have been released from juvenile detention facilities. Several caveats bear note. First, several samples included parents who were judged potentially unfit to retain custody of their children (e.g., Famularo et al., 1992; Murphy et al., 1991). These families may represent a particularly severe group of maltreating parents and prevalence rates of disorder in this group may not represent prevalence rates of disorder among maltreating parents generally. Second, the over-representation of parents with substance abuse problems on child protective service caseloads may reflect detection bias, wherein such parents are perceived as being at greater risk to their children than other parents (Benjet, Azar, & Kuersten-Hogan, 2003).

*Population samples.* Several studies have reported on the association between child maltreatment and parents' mental disorder using data from the representative St. Louis Epidemiological Catchment Area (ECA) sample (Robins & Regier, 1991). Dinwiddie and Bucholz (1993) reported that the lifetime rate of self-reported child physical abuse among parents in the ECA sample was 4.1%. Compared to nonabusers, those who reported perpetrating child physical abuse were significantly more likely to have a lifetime history of alcohol abuse/dependence, drug abuse, antisocial personality disorder, major depressive disorder, and panic disorder.

Egami, Ford, Greenfield, and Crum (1996) explored the link between mental disorder and child maltreatment among all adults in the ECA sample and found that a lifetime history of any mental disorder increased the odds of child physical abuse by 2.72 times. A lifetime history of alcohol abuse or dependence and a lifetime history of affective disorders increased risk for physical child abuse even controlling for a range of sociodemographic variables as well as other psychiatric diagnoses.

Finally, Chaffin, Kelleher, and Hollenberg (1996) utilized the prospective, longitudinal design of the ECA survey to predict the onset of child physical abuse and neglect from sociode-

mographic and psychiatric data measured at a previous wave. In models controlling for socio-demographic factors and psychiatric disorders, substance abuse remained a strong predictor of subsequent child physical abuse and mediated the association between a range of sociodemographic factors (e.g., parent's age, number in household, marital status, race) and the emergence of neglect.

This pattern of findings from the ECA study has been replicated in other large population samples. In a study of 1,200 unselected adults, the odds of engaging in violence against a spouse or partner, against a child, against someone outside the family or of engaging in child neglect were from 1.6 to 4.7 times higher among those who had a definite or possible diagnosis of antisocial personality disorder, alcohol abuse or dependence, or recurrent depression (Bland & Orn, 1986). Among individuals who were comorbid for two or more disorders, the odds of engaging in familial or extrafamilial violence were exponentially greater. Parent criminality and substance abuse were also implicated in child maltreatment in a study of 644 families who were part of a larger, unselected sample (Brown, Cohen, Johnson, & Salzinger, 1998). The odds of physical child abuse, neglect, and sexual abuse were four to six times higher among mothers who reported involvement with drugs, alcohol, and/or the police.

Similarly, retrospective data from the 8,548 participants in the Ontario Mental Health Supplement showed that adults who reported a history of childhood maltreatment were more likely to report that their own parents had psychiatric disorders and substance use problems compared with adults who did not report a history of childhood maltreatment; a parent's history of antisocial personality disorder increased the odds of child maltreatment by 7.5 (Walsh, MacMillan, & Jamieson, 2003; Walsh, MacMillan, & Jamieson, 2002). Finally, although the sample was small, at least one prospective, longitudinal study of 224 low-income families followed for 10 years found that maternal drug use and maternal depressive symptoms predicted which families would become involved with child protective services (Dubowitz et al., 2011).

*Summary.* Clinic and population studies have detected an association between parent mental disorder and child maltreatment even controlling for a range of sociodemographic factors that might explain the association. Substance abuse, affective, and antisocial personality disorders have consistently been found to increase risk for child maltreatment.

### **Why Is Parent Psychopathology Correlated with Child Maltreatment?**

Very few studies have explored why it is that parents who have a history of mental illness are at increased risk for family violence. Potential explanations may be common across mental disorders or may relate to specific disorders. Drawing from the literature on social cognition, it is possible that parent mental illness biases parents' cognitions about their children's behavior as well as their ability to recognize their children's emotions. Moreover, parents who are experiencing depression or substance use problems because they are also victims of partner violence may be at elevated risk of abusing or neglecting children because of difficulties in coping with social stressors. These hypotheses are reviewed below.

Social cognitive models of parenting posit that negative emotions bias parents' perceptions, interpretations, and evaluations of their children's behavior (Azar & Twentyman, 1986; Dix, 1991; Milner, 2003). Parents who are characteristically angry, depressed, or anxious are more likely to perceive children as acting in deliberately negative ways (Dix, 1991) and, consistent with those perceptions, to parent in a hostile, negative fashion (Rueger, Katz, Risser, & Lovejoy, 2011). Indeed, research shows that maltreating parents are more likely to attribute children's misbehavior to stable, global, and internal causes (for reviews see Azar, 2002; Milner, 2003; Seng & Prinz, 2008) and that parents who are at high risk for maltreating children have more readily accessible negative child-related schema (Crouch et al., 2010; Milner et al., 2011). Social cognitive models may also be applied in the context of partner violence, where negative emotionality may bias

an individual's perceptions of an intimate partner's behavior (Noller, Beach, & Osgarby, 1997).

A parent's depressogenic cognitive style (e.g., Abramson, Metalsky, & Alloy, 1989) may contribute to the perception that she or he is not competent in the parenting role and may cause the parent to withdraw from interaction with the child. In families where rates of parent-child interaction are low, children's misbehavior may be reinforced because it elicits a reaction from the withdrawn parent. These coercive exchanges may further undermine parents' perception of their competency (Azar, 2002). Low self-esteem and perceived control in parenting are characteristics of abusive parents (Trickett & Susman, 1988), suggesting the possibility that such parents have little faith in their ability to manage the child's behavior through less power-assertive means.

A third hypothesis proposes that parents who maltreat their children may have difficulties managing stress relative to other parents (Whipple & Webster-Stratton, 1991). Although exposure to social stressors may precipitate the onset or recurrence of mental disorder, a history of mental illness may also increase the risk of experiencing a range of social stressors including marital conflict, relationship and job instability, and the erosion of social supports. Thus, a parent's history of mental disorder may increase the probability of child maltreatment because of the greater number of stressors to which the parent is exposed and the parent's impaired capacity to manage stress (Abidin, 1992; McPherson, Lewis, Lynn, Haskett, & Behrend, 2009). Given the co-occurrence of partner violence and child maltreatment, partner violence itself may be a potent stressor that impairs the ability to parent effectively (Slep & O'Leary, 2001).

### **Implications for Children's Socioemotional Development and Resilience**

The fact that family violence and parental psychopathology tend to co-occur poses interpretive difficulties for studies attempting to determine whether family violence is a causal risk factor for

children's problem behaviors. This co-occurrence raises the possibility that gene variants common to parents and children explain the observed association between family violence and child psychopathology. That is, family violence may simply be a marker for genetic risk that parents transmit to children (DiLalla & Gottesman, 1991), a phenomenon known as passive gene-environment correlation (Plomin, DeFries, & Loehlin, 1977). Another possibility is that children inherit a genetic predisposition to engage in hard-to-manage behavior and that this behavior elicits abusive reactions from adults, a phenomenon known as evocative gene-environment correlation (Plomin et al., 1977).

Several studies using genetically informative research designs have ruled out these alternative hypotheses (Jaffee, Caspi, Moffitt, & Taylor, 2004; Jaffee, Strait, & Odgers, *in press*). Twin studies have shown that maltreatment is not significantly heritable (Jaffee, Caspi, Moffitt, Polo-Tomas et al., 2004; Schulz-Heik et al., 2009), suggesting that genetically influenced characteristics of the child do not explain why some children are more likely than others to experience maltreatment. Moreover, in models that estimate passive gene-environment correlations, adverse childhood events (including maltreatment and inter-parental conflict) have been shown to have direct effects on youth antisocial behavior (Eaves, Prom, & Silberg, 2010).

Although genotype is unlikely to account for the effect of maltreatment on children's risk for psychopathology, genotype is likely to moderate the effects of maltreatment (and other forms of victimization) on children's outcomes. The first evidence that a specific gene variant moderated the effect of maltreatment appeared in 2002 (Caspi et al., 2002). This study involved a cohort of 442 New Zealand men who had participated from birth in the Dunedin Longitudinal Study (Moffitt, Caspi, Rutter, & Silva, 2001). Among men who carried the low activity variant of the monoamine oxidase A gene (MAOA), those who experienced childhood adversities, including sexual and physical abuse, maternal rejecting behavior, harsh discipline, and frequent caretaker changes, had significantly higher levels of

antisocial behavior in childhood and adulthood than those who had not experienced childhood adversity. Among men who carried the high activity variant, childhood adversity was not associated with later antisocial behavior. In a subsequent paper focused on a variant in the serotonin transporter gene-linked polymorphic region (5HTTLPR) (Caspi et al., 2003), they showed that among men and women who were homozygous for the short form of the serotonin transporter polymorphism, experiencing more adverse childhood events was associated with increased levels of depression in adulthood. This association was not observed among individuals who were homozygous for the long form of the serotonin transporter polymorphism.

There is plausible biological evidence from animals and humans that these genotype x environment interactions capture real biological processes (for a review, see Caspi, Hariri, Holmes, Uher, & Moffitt, 2010). MAOA is involved in metabolism of monoamines in the brain and other organs (Shih & Thompson, 1999) and 5HTTLPR is involved in the reuptake of serotonin at brain synapses (Heils et al., 1995). Results of studies that either knock out or functionally excise these genes support the involvement of MAOA in aggressive traits (Cases et al., 1995; Shih, 2004) and 5HTTLPR in anxious traits (Murphy & Lesch, 2008). Studies of nonhuman primates provide evidence of GxE that is consistent with the human findings (for review, see Caspi et al., 2010), and 5HTTLPR and MAOA have been associated with brain activity in regions implicated in depression and aggression in response to negative stimuli (Buckholtz & Meyer-Lindenberg, 2008; Munafo, Brown, & Hariri, 2008).

Subsequent efforts to replicate the original findings involving MAOA, 5HTTLPR, and family violence have been mixed, with meta-analyses identifying small, but significant interaction effects (Karg, Burmeister, Shedden, & Sen, 2011; Kim-Cohen et al., 2006; for negative findings, see Munafo, Durrant, Lewis, & Flint, 2009; Risch et al., 2009). If real, genotype x environment (GxE) interactions provide important clues to the biological basis of resilience. For example, the neuroimaging genetics literature

has shown that individuals who are homozygous for the long form of the serotonin transporter polymorphism show lower levels of amygdala reactivity to negative vs. neutral stimuli, such as facial expressions of fear and sadness (Munafò et al., 2008). Amygdala reactivity may influence the cognitive processing of emotion expressions, with consequences for how individuals cope with their own or others' negative emotions. Other studies have shown that individuals who are homozygous for the long form of the serotonin transporter polymorphism produce lower levels of cortisol—a stress hormone—in response to a socially stressful task (Gotlib, Joormann, Minor, & Hallmayer, 2008). Because cortisol hyper-reactivity has been implicated in the pathophysiology of depression (Parker, Schatzberg, & Lyons, 2003) and cortisol hypo-reactivity has been implicated in antisocial behavior (van Goozen, Fairchild, Snoek, & Harold, 2007), genetic influences on stress response systems may provide a biological basis for resilience. However, because most studies of GxE focus on a single outcome (e.g., depression or antisocial behavior) more research is needed to determine whether risk for psychopathology in general is reduced if an individual has a particular genotype or if genotype x environment interactions involving specific gene variants reduce risk for specific forms of psychopathology, but not others.

Moreover, the fact that an individual is at genetic and environmental risk for maltreatment is no guarantee that the individual will suffer from mental health problems. At least one study found that children who had high levels of social support were at relatively low risk for depression even if they carried the short form of the serotonin transporter polymorphism and had been victims of maltreatment (Kaufman et al., 2004). There is a substantial literature on protective factors for child victims of family violence (many of whom will also be at genetic risk for psychopathology) implicating child-, family-, and community-level factors (for a review, see Afifi & MacMillan, 2011).

However, given that resilience is likely to arise from the balance of risk and protective factors

available to a child (Masten & Coatsworth, 1998), the co-occurrence of parental mental illness and family violence is likely to decrease the probability of resilience. It is important to consider how the course of a parent's mental illness may alter this balance and, consequently, alter the child's ability to maintain positive psychological functioning. Depression, for example, tends to recur throughout adulthood (Post, 1992) and the timing of a parent's depressive episodes may influence not only the likelihood that family violence will occur (e.g., partner violence is more likely to occur when a parent is experiencing an episode of depression; Capaldi & Kim, 2003), but also the parent's interactions with the child (Goodman & Gotlib, 1999). For example, a parent may be better able to buffer a child against exposure to inter-parental violence when the parent is suffering relatively few symptoms of psychopathology than when a parent is experiencing a clinical episode of disorder. Parents may be better able to handle psychosocial stressors and, consequently, use nonabusive forms of discipline when they are psychologically well vs. when they are psychologically distressed.

In summary, although family violence is multiply determined, the association between family violence and parent mental illness is robust across studies, particularly for mood disorders, antisocial personality disorder, and substance abuse disorder. I argue that children's inherited vulnerability to disorder may be exacerbated by exposure to family violence, children's risk for a range of adverse outcomes increases with the number of psychosocial risk factors to which the child is exposed, and violence in families where a parent has a history of disorder is likely to be more severe, persistent, and pervasive than in families where violence and mental disorder do not co-occur. Clinicians working with victims or perpetrators of family violence should be especially aware of the degree to which mental illness may be a cause or consequence of violence because the co-occurrence of family violence and mental illness may jeopardize children's chances of positive adjustment.

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