

The Developmental Psychopathology of Depression

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The prevalence of major depression varies substantially across the life-course. A meta-analysis of depression in youth reported that the prevalence of depression is only 2.8% in children under the age of 13 and increases to 5.6% in adolescents aged 13-18 (Costello, Erkanli, & Angold, 2006). By adulthood, the lifetime prevalence of depression is 16.2% with 6.6% of adults experiencing a major depressive episode in the past year (Kessler et al., 2003). The incidence of depression remains relatively low until about 11 years of age and rises most dramatically between ages 15-18 (Hankin et al., 1998; Kessler et al., 2003). Although the prevalence of childhood depression is similar for boys and girls, females are more likely than males to develop depression beginning at age 13 (Hankin et al., 1998; Nolen-Hoeksema & Girgus, 1994; Nolen-Hoeksema & Twenge, 2002). Risk for depression remains elevated among females relative to males throughout adolescence and adulthood (Kessler et al., 2003; Kim-Cohen et al., 2003; Newman et al., 1996).

This chapter presents a developmental psychopathology perspective on the emergence of major depression across the life-course. We build on previous reviews that first articulated a developmental psychopathology perspective in regards to child and adolescent depression (Cicchetti & Toth, 1998, 2009a). Specifically, this chapter explores the impact of developmental processes on risk for depression in children and adolescents and examines the role of developmental factors in shaping risk for depression in adulthood. Application of a developmental psychopathology perspective to depression begins with the assumption that neurobiological, psychological, and social systems are organized across development (Cicchetti, 1993). The development of these systems is shaped by numerous contexts in which children are embedded and that interact with one another and with children's developing neurobiological, psychological, and social systems across time. We focus here on factors that can alter the developmental trajectories of these systems in ways that increase risk of depression during three specific developmental stages: early childhood, middle childhood, and adolescence.

The Developmental Psychopathology Framework

Developmental psychopathology seeks to characterize patterns of adaptation and maladaptation across the life-course by examining the dynamic interplay of social context and individual patterns of neurobiological, psychological, and social development over time. The core principles of this discipline provide an organizing framework for the chapter. First, a developmental psychopathology perspective emphasizes the reciprocal and integrated nature of our understanding of normal and abnormal development; normal developmental patterns must be characterized to identify developmental deviations, and abnormal developmental outcomes shed light on the normal developmental processes that lead to maladaptation when disrupted (Cicchetti, 1993; Sroufe, 1990). Critically, maladaptive outcomes—including psychopathology—are considered to be the product of development rather than diseases or disabilities (Sroufe, 1997, 2009). We incorporate this principle by highlighting the primary developmental tasks occurring within each stage of childhood and adolescence and reviewing the factors that can result in deviations from typical developmental trajectories that ultimately confer risk for depression. Although there are a variety of ways in which cognitive development influences major depression, our focus here is primarily on social and emotional development. Second, development is cumulative and hierarchical (Gottlieb, 1991a, 1991b; Sroufe & Rutter, 1984; Werner & Kaplan, 1963). This means that development is influenced not only by genetics and the environment, but also by previous development (Sroufe, 2009; Sroufe, Egeland, &

Kreutzer, 1990). Acquisition of competencies at one point in development provides the scaffolding upon which subsequent skills and competencies are built, such that capabilities from previous periods are consolidated and reorganized in a dynamic, unfolding process across time. Developmental deviations from earlier periods are carried forward and have consequences for children's ability to successfully accomplish developmental tasks in a later period (Cicchetti & Toth, 1998). Here, we highlight how disruptions in developmental processes earlier in the life-course may prevent the acquisition of competencies in later developmental periods. Third, developmental psychopathology emphasizes the importance of individual differences in both developmental process and outcome (Cicchetti, 1993). Central in this conceptualization of development are the principles of equifinality and multifinality. Equifinality refers to the notion that multiple developmental pathways may lead to the same outcome, whether adaptive or maladaptive (Cicchetti & Rogosch, 1996, 1997). In this chapter, we focus on the multitude of developmental pathways that may ultimately culminate in major depression. Conversely, the same risk and/or resilience factors may ultimately lead to different developmental outcomes, a process known as multifinality (Cicchetti & Rogosch, 1996). Finally, a developmental psychopathology perspective considers the dynamic interplay between risk and resilience factors operating at multiple levels to influence developmental outcomes (Cicchetti & Toth, 2009b). This includes a focus on neurobiological, psychological, and social development and, in particular, the importance of social context and social ecology in shaping each of these aspects of development (Cicchetti, 1996; Cicchetti & Lynch, 1993; Lynch & Cicchetti, 1998). Throughout the chapter, we refer to the numerous social contexts in which children are embedded and the mechanisms through which these environments confer risk for depression (see Figure 1). The remainder of this chapter uses these guiding principles to explore the developmental origins of major depression.

Early Childhood

The first developmental period examined here is early childhood. The bounds of this developmental period in terms of age vary across studies. Here we focus on the time period from birth until formal school entry, which typically occurs at age five in the United States and Europe.

Salient Developmental Tasks

Remarkable developmental changes occur during early childhood. In the first year of life, infants must learn to regulate physiological states to maintain homeostatic equilibrium and develop basic skills to manage arousal (Sroufe & Rutter, 1984). Infants typically rely on several types of behaviors to modulate arousal, including approach-withdrawal, attentional shifting, and self-soothing (Rothbart & Derryberry, 1981; Stifter & Braungart, 1995). However, the infant has a limited repertoire of behaviors to draw upon to regulate arousal independently, and the infant-caregiver relationship provides the primary means through which the young child modulates arousal (Kopp, 1989). Indeed, the development of a primary attachment relationship represents a central developmental task of infancy and early childhood (Bowlby, 1969; Sroufe, 1979). The attachment relationship involves an emotional bond between the child and caregiver that serves to organize infant behavior and arousal, particularly during exploration and periods of distress

(Ainsworth, Blehar, Waters, & Wall, 1978; Sroufe, 1979). Patterns of interaction between the infant and caregiver consolidate into stable representational models of the self in relation to others (Bowlby, 1969, 1973; Bretherton & Waters, 1985). When children enter the toddler period, the development of skills to modulate and tolerate arousal lays the foundation for emotional and behavioral regulation, as children begin to explore the environment and develop autonomy from caregivers. During the toddler and preschool period, the development of effortful control and self-regulation skills is paramount. These skills are related to intentional and voluntary control over attention and behavior and include effortful attention, delay of gratification, inhibition of action upon a desired goal/object, compliance, and goal-directed actions (Kochanska, Murray, & Harlan, 2000; Kopp, 1982; Rothbart, Ahadi, & Evans, 2000). Self-regulation skills play a crucial role in shaping both social and academic competence and psychopathology in subsequent developmental periods.

Early Childhood Social Environment and Depressogenic Deviations

What sorts of environmental conditions promote the successful accomplishment of these central developmental tasks of early childhood? We draw here on the notion of the “average expectable environment,” which argues that for a given species there are a range of environments that can promote normal development (Cicchetti & Lynch, 1995; Hartmann, 1958). Specifically, we focus on deviations from the expectable environment that may disrupt developmental processes in ways that increase risk for depression. At the most basic level, normal development in early childhood requires safety and security from threats to physical integrity. The development of a secure attachment to a primary caregiver is contingent upon the child’s ability to use the caregiver as a “secure base” from which to explore and to return to for protection in novel and potentially threatening situations (Ainsworth et al., 1978; Bowlby, 1969). Moving beyond the basic need for safety, the presence of caregivers who are responsive to the child’s needs and provide sensitive and appropriate caregiving is an important component of the expectable environment that fosters adaptive development (Sroufe, 1979). Finally, caregiving that is predictable and regular provides the structure to promote successful development in early childhood. This type of caregiving environment facilitates the development of a secure attachment to a caregiver as well as the child’s ability to adaptively regulate arousal, emotions, and behavior (Sroufe, 1979, 1983).

Because the expectable environment in early childhood is determined primarily by the child’s caregivers, we examine how deviations from sensitive, responsive, and consistent parenting influence developmental processes in early childhood that have relevance for depression. First, we explore the influence of insensitive and inconsistent parenting behaviors on early child development. Second, we examine the impact of maternal depression on developmental processes in early childhood. Maternal depression poses numerous risks to the developing child including inherited biological vulnerability to depression, insensitive and inconsistent parenting, and exposure to marital conflict and other stressful, unpredictable, or unstable family environments (Goodman & Gotlib, 1999). A substantial literature has established the increased risk of depression among the offspring of depressed mothers (Beardslee, Versage, & Gladstone, 1998; Downey & Coyne, 1990; Goodman & Gotlib, 1999). Exposure to maternal depression during infancy and early childhood is argued to be particularly detrimental to adaptive development (Bureau, Easterbrooks, & Lyons-Ruth, 2009), although empirical studies examining the impact of maternal depression in early versus later childhood are

largely lacking (Goodman & Gotlib, 1999). Finally, a more marked departure from the expectable environment in early childhood involves exposure to maltreatment. Early childhood is a developmental period of high risk for maltreatment, particularly for physical abuse and neglect (Finkelhor, Ormrod, Turner, & Hamby, 2005; Sedlak & Broadhurst, 1996). Child maltreatment is associated with elevated risk for major depression in childhood, adolescence, and adulthood (Brown, Cohen, Johnson, & Smailes, 1999; Green et al., 2010; Kaplan, Pelcovitz, & Labruna, 1999; Keiley, Howe, Dodge, Bates, & Pettit, 2001).

Mechanisms linking the Early Childhood Environment to Depression Risk

How do disruptions in caregiver behaviors influence development and risk of depression? A primary psychological mechanism linking parenting behaviors in early childhood to depression is attachment security. Attachment theory posits that children develop a secure emotional bond with caregivers who are sensitive, responsive, and predictable; securely attached children will readily explore new environments and return to the caregiver for safety (Ainsworth, et al., 1978; Bowlby, 1969). In contrast, inconsistent and insensitive parenting is argued to result in an insecure attachment style, in which children are unable to use their caregiver as the foundation for exploration and safety. Several classifications of insecure attachment styles have been characterized, including anxious/avoidant, ambivalent, and disorganized/disoriented (Ainsworth et al., 1978; Main & Soloman, 1986). Insensitive and non-responsive parenting behaviors are robustly associated with the development of an insecure attachment style in infants (Egeland & Farber, 1984). Evidence also consistently suggests that children of depressed mothers are less likely to develop a secure attachment style than children of mothers without depression (Coyle, Roggman, & Newland, 2002; Martins & Gaffan, 2000; Teti, Gelfand, Messinger, & Isabella, 1995). Insecure attachment in children of depressed mothers is thought to emerge in response to a variety of insensitive and inconsistent parenting behaviors. Maternal behavior in depressed woman has been characterized as unresponsive, inattentive, intrusive, punitive, hostile, and ineffective at resolving conflict (Gelfand & Teti, 1990; Goodman & Gotlib, 1999; Gotlib & Goodman, 1999). More extreme departures from the expected environment, including maltreatment and institutional rearing, have been shown to dramatically interfere with the development of a secure attachment style. Children exposed to maltreatment and institutional rearing are particularly likely to develop insecure attachment, and many children in these adverse environments display features of a disorganized/disoriented attachment style (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Zeanah, Smyke, Koga, Carlson, & The Bucharest Early Intervention Project Core Group, 2005). Disorganized/disoriented attachment is a particularly severe departure from a secure attachment style that is characterized by a lack of coherence in responses to caregiver separation and reunification, a blending of contradictory strategies, and bizarre behaviors that are not easily classified (Main & Soloman, 1986).

Insecure attachment has been consistently identified as risk factor for major depression in children and adolescents (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Brumariu & Kerns, 2010; Moss et al., 2006), suggesting that attachment security is a mechanism underlying the association between adverse caregiving environments in early childhood and risk for depression. Perhaps the strongest evidence for the role of attachment security as a mechanism linking the early rearing environment to risk for depression comes from a recent study documenting that changes in attachment security were a mechanism underlying the ameliorative effects of a foster care intervention on internalizing disorders in previously institutionalized

children (McLaughlin, Zeanah, Fox, & Nelson, 2012). This study suggests that randomization to an improved rearing environment prevented the onset of internalizing disorders by improving attachment security. Attachment insecurity therefore appears to have a direct effect on risk for major depression. However, disruptions in the formation of a secure attachment relationship may also lead to depression at later points in development through indirect pathways related to emotion regulation and social competence. These pathways are described in the section on middle childhood.

Deviations from sensitive, responsive caregiving in early childhood can also set the stage for the onset of depression by disrupting the development of self-regulation. Maternal responsiveness, warmth, and consistency are associated with greater effortful control in the preschool period (Eisenberg et al., 2003; Kochanska et al., 2000; Lengua, Honorado, & Bush, 2007), whereas maternal negativity is associated with poor attentional and behavior regulation, including delay ability (Silverman & Ragusa, 1992). Although difficulties with effortful control have been linked most consistently to externalizing behavior problems in children (Eisenberg et al., 2000), poor effortful control—particularly poor attentional regulation—is also associated with depressive symptoms in children and adolescents (Eisenberg, Cumberland, et al., 2001; Lemery, Essex, & Smider, 2002; Muris, Meesters, & Blijlevens, 2007; Zalewski, Lengua, Wilson, Trancik, & Bazinet, 2011).

Adverse rearing environments may also increase risk of depression by increasing children's emotional and physiological reactivity to the environment. As early as the neonatal period, offspring of depressed mothers exhibit both behavioral and physiological dysregulation, which is thought to result from either a heritable biological predisposition or atypical prenatal exposure to neurochemicals associated with depression (Field, 1998). Both maternal depression and poor quality parenting in infancy can disrupt brain development in ways that increase children's risk for depression. Specifically, these environments have been shown to influence the development of frontal electroencephalogram (EEG) asymmetry. Frontal regions of the cerebral cortex are differentially lateralized to process positive and negative stimuli and underlie both behavioral and expressive responses to emotional information. The left frontal region is activated by positive emotional stimuli and promotes approach behavior, whereas the right frontal region is activated by negative stimuli and underlies withdrawal or avoidance behavior (Davidson, 1992; Davidson, Ekman, Saron, Senulis, & Friesen, 1990; Davidson & Fox, 1982; Fox, 1991). Asymmetrical resting activation in these frontal regions can be assessed using EEG. Both poor quality maternal caregiving and maternal depression are associated with greater activation in the right relative to the left frontal cortex in infants (Field, Fox, Pickens, & Nawrocki, 1995; Hane & Fox, 2006; Hane, Henderson, Reeb-Sutherland, & Fox, 2010; Jones, Field, Davalos, & Pickens, 1997; Jones, Field, Fox, Lundy, & Davalos, 1997). Frontal EEG asymmetry has also been observed among children exposed to more extreme environments in early childhood, including institutionalization (McLaughlin, Fox, Zeanah, & Nelson, 2011). Children with this pattern of hemispheric activation are more behaviorally inhibited, socially reticent, exhibit low positive emotionality, and experience greater negative affect in response to maternal separation than those without this pattern of neural activation (Davidson & Fox, 1989; Fox, 1991; Fox et al., 1995; Fox & Davidson, 1987; Shankman et al., 2005). Moreover, frontal EEG asymmetry is associated prospectively with internalizing psychopathology in children (McLaughlin, Fox, et al., 2011) and with major depression in adults (Gotlib, Ranganathan, & Rosenfeld, 1998).

Maternal depression and insensitive caregiving can also disrupt the functioning of the hypothalamic-pituitary-adrenal (HPA) axis. Alterations in this physiological system may ultimately result in heightened risk for depression. The typical circadian rhythm of cortisol—characterized by high values in the morning, a relatively steady decline across the day, and lowest values in the evening—is evident in children as early as 12 months, although a smaller decline from morning to afternoon has been observed in early childhood as compared to later developmental periods (Watanabe, Donzella, Kertes, & Gunnar, 2004). In early childhood, the transition to preschool is associated with changes in physiological stress response systems. Toddlers exhibit increases in cortisol during the period of the day when they leave home and are taken to preschool, but this increase in cortisol is less substantial for children who have secure attachments to their primary caregivers (Ahnert, Gunnar, Lamb, & Barthel, 2004). Toddlers with a secure attachment to their caregiver also exhibit a reduced cortisol response to novel situations than insecurely attached children; this effect is particularly pronounced for children with high levels of behavioral inhibition (Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996). Early-life maternal stress, maternal depression, and a lack of sensitive, responsive caregiving are related to elevated cortisol during periods of stress in early childhood (Essex, Klein, Cho, & Kalin, 2002). Children with higher levels of cortisol and greater increases in cortisol across the day at child care engage in less play with peers and lower levels of play complexity, suggesting a link between cortisol regulation and social behavior in early childhood (Watanabe, Donzella, Alwin, & Gunnar, 2003). Indeed, children who exhibit high levels of cortisol within play groups at preschool are rated as lower in social competence and effortful control than children whose cortisol levels are less reactive to social group interaction (Gunnar, Tout, de Haan, Pierce, & Stanbury, 1997). Elevated morning cortisol in early childhood is also associated concurrently with behavioral inhibition and shyness (Schmidt et al., 1997). Although depression is not a disorder observed in young children, neuroendocrine changes related to poor rearing environments may set the stage for depression through their associations with risk factors for the disorder at later developmental periods, including behavioral inhibition and poor social competence.

Social Ecological Factors

Economic disadvantage has been shown to play a more important role in cognitive development than emotional development during early childhood (Duncan, Brooks-Gunn, & Kato Klebanov, 1994; McLoyd, 1998). However, the effects of early-life economic deprivation on children's cognitive development influence school readiness and may carry over into middle childhood and adolescence to influence risk for depression through pathways related to academic competence and school performance. Parents who live in economically disadvantaged circumstances are more likely to be depressed (Lorant et al., 2003) and engage in harsh or inconsistent parenting practices (McLeod & Shanahan, 1993; McLoyd, 1998), which in turn can disrupt a variety of developmental processes in early childhood that culminate in risk for offspring depression. These factors may be particularly exacerbated in families who live in concentrated poverty neighborhoods that lack social and economic resources to support families with young children. Such factors can be structural (e.g., availability of low-cost day care) or social (e.g., social norms around parenting and discipline and informal social controls regarding the use of corporal punishment) (Leventhal & Brooks-Gunn, 2000; Lynch & Cicchetti, 1998). Community-level factors may also buffer against the effects of poverty on children's

development. Access to early intervention programs provides essential support for at-risk families and can dramatically lower the risk of adverse developmental outcomes for young children (Anderson et al., 2003; Love et al., 2005).

Middle to Late Childhood

We next examine factors that influence the development of depression during the period beginning with children's first entry into school and lasting until the pubertal transition. Although depression remains relatively rare in middle childhood, some children experience a first episode of major depression during this time period. We explore both the developmental factors that increase risk of depression in middle childhood and those factors that contribute to elevated risk for depression in adolescence and adulthood.

Salient Developmental Tasks

The transition to school presents a variety of challenges for the developing child to navigate as more time is spent outside the home interacting with peers and with adults other than primary caregivers. Regular attendance at school introduces a novel set of competencies that the child must acquire to succeed in the school environment. Children are introduced for the first time to the domain of academic achievement. Achievement is shaped by a variety of dispositional characteristics, including cognitive ability, motivation, and attitudes about school and one's abilities (Dweck, 1986; Masten & Coatsworth, 1998). As children enter school, they quickly develop beliefs about their abilities and achievement-related goals that shape both academic motivation and school performance (Dweck, 1986; Elliott & Dweck, 1988; Greene & Miller, 1996; Harter, 1982). Academic achievement also requires a solid foundation of self-regulation skills. The development of self-regulation continues into middle childhood, as children must develop increased ability to sustain attention, inhibit behaviors, delay gratification, and engage in task switching in the school environment. Self-regulation skills also play an important role in the development of socially appropriate behavior. Specifically, children must learn to abide by social norms and rules of conduct (Masten & Coatsworth, 1998; Masten, Coatsworth, Neeman, Gest, & Tellegan, 1995; Sroufe & Rutter, 1984). This is particularly true at school, but also applies to compliance at home, peer interactions, extracurricular activities, and in a variety of other situations in which children interact with adults outside the family. Children's patterns of rule-abiding versus rule-breaking behavior that emerge during middle childhood appear to be remarkably stable into adolescence and early adulthood (Masten et al., 1995). The development of competency in this area therefore has lasting implications for mental health and adaptive functioning. Pro-social behavior is consistently linked to the prior development of moral emotions during early childhood, particularly empathy (Fabes, Eisenberg, & Eisenbud, 1993; Holmgren, Eisenberg, & Fabes, 1998). Indeed, the foundations of numerous aspects of emotionality and emotion regulation begin to develop during the preschool period, including emotional awareness, understanding of others' emotions, and patterns of emotional expressiveness and coping (Denham, 1998; Denham et al., 2003). The consolidation of these emotion regulation skills represents an additional developmental task during middle childhood, as patterns of emotionality and emotion regulation become more stable (Cole, Michel, & O'Donnell Teti, 1994; Eisenberg et al., 1997). As children engage with an increasing number of individuals outside the family, the ability to identify, understand, and adaptively modulate their

emotional experiences in the service of goals becomes paramount. A final critical task of middle childhood involves the development of social competence, particularly within the context of peer relationships (Masten & Coatsworth, 1998; Masten et al., 1995; Sroufe & Rutter, 1984). Children begin to form friendships and must develop skills to ensure harmonious relationships with peers in the school setting. Social hierarchies begin to emerge, and peer acceptance plays an important role in shaping child adjustment during middle childhood.

Childhood Social Environment and Depressogenic Deviations

Several environmental contexts influence children's ability to successfully accomplish developmental tasks of middle childhood. The family environment continues to play a central role in shaping positive development during this period. Parenting styles that are warm and accepting and provide consistent structure, discipline, and expectations for behavior promote adaptive development in academic, social, and emotional realms (Macoby & Martin, 1983; Steinberg, Elmen, & Mounts, 1989; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). Parenting quality is associated with depression, both in middle childhood and later in development (Berg-Nielson, Vikan, & Dahl, 2002; Garber, Robinson, & Valentiner, 1997; Oakley-Browne, Joyce, Wells, Bushnell, & Hornblow, 1995), although recent evidence suggests that parenting explains only a small proportion of the variance in child depression (McLeod, Weisz, & Wood, 2007). Adverse family environments—including marital conflict, violence, parental psychopathology, and child maltreatment—are particularly powerful predictors of depression risk (Brown et al., 1999; Cicchetti & Toth, 2005; Cohen, Brown, & Smailes, 2001; Fantuzzo et al., 1991; Sternberg et al., 1993). We explore how deviations from adaptive parenting and disruptions in the family environment influence the primary developmental tasks of middle childhood in ways that increase risk of depression.

Children spend a substantial amount of time outside the home in middle childhood, and the school environment also contributes to children's development of autonomy and academic and social success. In elementary school, the quality of teacher-student relationships are associated with academic performance as well as social and emotional competence (Birch & Ladd, 1997; Murray & Greenberg, 2000). School also provides the primary context for peer interactions. The landscape of the peer environment is a particularly important contributor to adjustment and maladjustment during middle childhood. The formation of stable friendships and positive interactions with peers is associated with positive developmental outcomes, whereas peer rejection and poor friendship quality contribute to maladjustment across numerous domains of functioning and are associated with risk of depression (Coie, Lochman, Terry, & Hyman, 1992; DeRosier, Kupersmidt, & Patterson, 1994; Hecht, Inderbitzen, & Bukowski, 1998; Hymel, Rubin, Rowden, & Lemare, 1990; Ladd, 1990; Oldenburg & Kerns, 1997; Parker & Asher, 1993). Peer victimization and bullying are particularly strong determinants of depression risk during this time period (Gladstone, Parker, & Malhi, 2006; Hawker & Boulton, 2000; Hodges & Perry, 1999; Olweus, 1993). We examine the consequences of peer rejection, victimization, and low friendship quality on developmental processes related to depression risk.

Mechanisms linking the Childhood Environment to Depression Risk

Children's motivation, beliefs and goals about academic achievement first develop in middle childhood. Children with learning goals focused on competency building exhibit greater

motivation for achievement, seek out academic challenges, display greater behavioral persistence in academic tasks, and are characterized as having a mastery orientation towards academics (Dweck, 1986; Elliott & Dweck, 1988; Heyman & Dweck, 1992). In contrast, children whose goals focus on performance or evaluations of the adequacy of their competencies, particularly those with low ability or confidence, exhibit a passive and helpless orientation, avoid challenging tasks, and have low behavioral persistence (Elliott & Dweck, 1988; Heyman & Dweck, 1992). This helpless and passive orientation to school predicts the onset of symptoms of depression following academic stressors, such as receiving a bad grade (Hilsman & Garber, 1995). Mastery of developmental tasks in early childhood also shapes academic achievement. In particular, children with better self-regulation skills—particularly effortful control—are more likely to transition successfully to kindergarten and have higher academic achievement throughout elementary school (Blair & Razza, 2007; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Children with poor academic competency in elementary school are more likely to develop symptoms of depression during this period (Cole, 1990/1991).

Emotion regulation skills continue to develop throughout middle childhood, and the family environment plays an important role in the development of these skills. Children learn to regulate emotions by observation and modeling of parental emotional behavior and through socialization processes within the family (Eisenberg, Cumberland, & Spinard, 1998; Morris, Silk, Steinberg, Myers, & Robinson, 2007). Parent socialization of emotion is a critical factor in children's development of emotion regulation skills and prosocial behavior during this period (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Eisenberg et al., 1998; Gottman, Katz, & Hooven, 1997). Parental emotion expression, responses to emotion in their children and others, and explicit teaching about emotion all drive the development of emotional competence in middle childhood. Children raised in families with high levels of negative affect expression, for example, exhibit poor emotional awareness, frequent anger displays, and poor regulation skills (Dunn & Brown, 1994; Eisenberg, Gershoff, et al., 2001; Snyder, Stoolmiller, & Wilson, 2003). Moreover, difficulties in the formation of a secure attachment style may “carry over” to influence emotion regulation in middle childhood. Attachment behavior is organized by internal working models that guide emotion regulation throughout the life-course, and failure to develop a secure attachment to a caregiver may preclude the development of adaptive emotion regulation skills in middle childhood (Cassidy, 1994; Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000; Zimmerman, 1999). Children exposed to maltreatment and domestic violence exhibit deficits in numerous aspects of emotion regulation including recognition and awareness of emotions, emotion expression, and coping (Camras et al., 1988; Jungmeen & Cicchetti, 2010; Katz, Hessler, & Anest, 2007; Maughan & Cicchetti, 2002; Shipman & Zeman, 2001; Shipman, Zeman, Penza, & Champion, 2000). Peer experiences can also shape emotion regulation in middle childhood. Peer victimization experiences elicit negative emotions including anger, sadness, and contempt (Mahady Wilton, Craig, & Pepler, 2000), and youths who are the victims of peer aggression exhibit high levels of emotional arousal and reactivity (Schwartz, Dodge, & Coie, 1993). Emotion regulation deficits have consistently been identified as risk factors for depression (Garber, Braafladt, & Weiss, 1995; McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011; Sheeber et al., 2009; Silk, Steinberg, & Morris, 2003), suggesting that they represent a key mechanism linking the childhood social environment to depression risk.

An additional mechanism linking the family, peer, and school environment to depression risk in middle childhood is social competence. Social competence encompasses a variety of behaviors and social information-processing patterns that contribute to successful interpersonal

interactions and adaptive social functioning (Dodge, Pettit, McClaskey, Brown, & Gottman, 1986). Harsh, punitive, and inconsistent parenting can disrupt children's ability to develop socially appropriate and rule-governed behaviors, and exposure to conflict and stress within the family environment can negatively influence the development of social competence. Children exposed to harsh parenting and violence within the family are likely to develop a variety of social information-processing patterns that increase risk for aggressive behavior, maladjustment in peer relationships and social rejection (Dodge, Bates, & Pettit, 1990; Schwartz, Dodge, Pettit, & Bates, 1997; Weiss, Dodge, Bates, & Petit, 1992). Conflictual and violent family environments are also related to hostility, elevated peer conflict, and poor conflict resolution skills in children (Herrera & Dunn, 1997; Matthews, Woodall, Kenon, & Jacob, 1996; McCloskey & Stuewig, 2001). Prior development of emotion regulation skills plays a central role in shaping social competence during this period. Children with low negative emotionality and adaptive emotion regulation skills are consistently found to be more socially competent and have better social functioning than children with high emotional reactivity and poor regulation skills (Denham et al., 2003; Eisenberg et al., 1995; Eisenberg et al., 1997; Eisenberg, Gershoff, et al., 2001; Spinard et al., 2006). Moreover, children who engage in greater levels of prosocial behavior and have developed a solid understanding of social norms regarding appropriate behavior, fairness, and equity are more likely to be considered socially competent by both adults and peers (Denham & Holt, 1993). Although adverse environments involving violence and conflict are most strongly associated with social competence difficulties, normal variations in parenting continue to be an important determinant of both emotion regulation and social competence in middle childhood. Parents with good awareness of emotion, particularly their child's emotions, who engage in appropriate emotion coaching have children who exhibit more positive and less negative behaviors in play with peers (Katz & Windecker-Nelson, 2004). Together, difficulties with social information-processing and appropriate social behavior contribute to elevated risk for depression, both in childhood and in later developmental periods (Cole, 1990; Cole, Martin, & Powers, 1997; Cole, Martin, Powers, & Truglio, 1996; Dodge, 1993).

Finally, adverse family and peer environments in childhood can disrupt the development of physiological stress response systems. A substantial literature has examined the influence of adverse family environments on HPA axis functioning and reactivity. In middle childhood, converging evidence suggests that adversity is associated with blunted cortisol reactivity and a diurnal rhythm characterized by low morning values and a flattened decrease across the day, a pattern called hypocortisolism (Dozier et al., 2006; Gunnar & Vazquez, 2001; Hart, Gunnar, & Cicchetti, 1995; Heim, Ehlert, & Helhammer, 2000), although some studies have found an opposite pattern (Cicchetti & Rogosch, 2001; Gunnar, Morison, Chisolm, & Schuder, 2001). Dysregulated cortisol regulation has also been observed in depressed children, with the most commonly reported pattern involving elevated evening cortisol levels (Dahl et al., 1991; Goodyer, Park, & Herbert, 2001; Hart, Gunnar, & Cicchetti, 1996; Lopez-Duran, Kovacs, & George, 2009). The degree to which this dysregulation is a precursor to depression or a consequence of depression itself remains unclear, although one study found that afternoon cortisol values at age four are associated prospectively with elevated internalizing problems, social wariness, and withdrawal behaviors during kindergarten (Smider et al., 2002). Further research is needed to disentangle the relationship between environmental adversity, HPA axis regulation, and depression risk in middle childhood.

Social Ecological Factors

Much of the research on broader social and ecological factors that influence development in middle childhood has focused on cognitive development, academic competence, and risk for externalizing problems (Leventhal & Brooks-Gunn, 2000). Indeed, concentrated neighborhood disadvantage has been shown to have lasting effects on children's cognitive ability (Sampson, Sharkey, & Raudenbush, 2007). Neighborhood disadvantage may thus contribute to depression risk indirectly by interfering with academic achievement and motivation. Neighborhood characteristics may also increase risk for more exposures that are associated strongly with child and adolescent depression, including violence and maltreatment (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007; Gorman-Smith & Tolan, 1998). Moreover, family processes serve as a mechanism linking the broader social context to child adjustment during middle childhood. The development of informal social controls that promote positive bonds to societal institutions, including family, school, and work, are disrupted in families living in urban poverty (Sampson & Laub, 1994). The disruption of these social controls is associated with increased delinquency in children, an effect which is mediated through harsh and inconsistent parenting, poor supervision, and insecure child-parent attachment (Sampson & Laub, 1994). These same mechanisms are likely to increase risk of depression, both in middle childhood and adolescence. Concentrated poverty neighborhoods and neighborhoods with high residential instability have a notable absence of expectations for shared child control and collective efficacy for children, such as adult-child exchanges outside the home (Sampson, Morenoff, & Earls, 1999), as well as institutional resources to support parents, including access to educational, social, and recreational opportunities (Leventhal & Brooks-Gunn, 2000). The absence of social controls, social capital, and resources to support child rearing may directly influence children's ability to develop socially appropriate behavior and social competence, which may further contribute to risk for depression both concurrently and in later developmental periods.

Adolescence

The prevalence of depression increases dramatically during adolescence, particularly for girls and for sexual minority adolescents. Here, we define adolescence as the period spanning the onset of the pubertal transition through high school graduation (or the age-equivalent for adolescents who do not complete high school). For comprehensive reviews on adolescent depression see Nolen-Hoeksema and Hilt (2009) and Strauman and colleagues (2011).

Salient Developmental Tasks

Adolescence marks a period of remarkable change in cognitive, physiological, psychological, and social domains. Adolescents become increasingly autonomous and experience marked individuation from parents. The development of a stable identity and sense of self is thus a central task of adolescence. Adolescents develop an increasingly abstract self-concept centered around personal beliefs and values (Harter, 1998; Steinberg & Morris, 2001). Sexual orientation and ethnic identities also develop at this time (D'Augelli, 1994; Phinney, 1990). Adolescents develop relatively stable attitudes and attributional style, or patterns of interpreting events in the world (Garber, Weiss, & Shanley, 1993; Gotlib, Lewinsohn, Seeley, Rohde, & Redner, 1993). Puberty is the hallmark of adolescent physiological development.

Puberty consists of changes in secondary sexual characteristics in early adolescence, a salient developmental milestone that impacts both identity and relationship development. Maturational deviance, a misalignment between an individual's pubertal timing and that of their same-age peers, has been linked to depression and adjustment problems. Both prospective and cross-sectional studies have established a strong link between early pubertal onset and heightened risk for major depression in girls (Angold, Costello, & Worthman, 1998; Ge, Conger, & Elder, 2001; Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997; Graber, Nichols, & Brooks-Gunn, 2010; Mendle, Harden, Brooks-Gunn, & Graber, 2010; Negri & Susman, 2011; Stice, Presnell, & Bearman, 2001). In contrast, late maturing boys may be at increased risk for depression (Conley & Rudolph, 2009; Graber et al., 1997). Social roles change dramatically during adolescence as relationships with parents become less close and more conflictual (Collins, 1990; Steinberg, 1987, 1988), relationships with peers become increasingly important and occupy more time (Buhrmester & Furman, 1987; Larson & Richards, 1991), and social acceptance is paramount. A central task of adolescence is to learn to regulate affect in adaptive ways, increasingly without the aid of the adults who provide guidance in childhood (Steinberg & Avenevoli, 2000; Steinberg et al., 2006). Changes in cognitive, physiological, and social systems present innumerable affectively-laden situations in which emotions must be successfully managed to ensure adaptive functioning (Larson & Richards, 1991; Steinberg, 1987). For instance, increasing independent contact with peers introduces numerous challenges that require effective emotional response management (e.g., entry into romantic relationships, exposure to peer substance use).

Adolescent Social Environment and Depressogenic Deviations

Although adolescents spend less time with parents and greater time with peers during this period, the family environment remains important in shaping adolescent development. The same parenting styles that promote positive adjustment in middle childhood continue to foster adaptive development in adolescence. In particular, authoritative parenting is associated with positive social, emotional, and academic functioning and psychosocial maturity in adolescence (Macoby & Martin, 1983; Steinberg et al., 1989; Steinberg et al., 1991). Authoritative parenting is defined as warm yet demanding; authoritative parents are responsive to their child's needs but have high expectations, clear rules for behavior, and firm discipline (Darling & Steinberg, 1993; Macoby & Martin, 1983). Adolescents who are securely attached to parents are at lower risk for depression during the transition to adolescence (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990). In contrast, adolescents from families characterized by greater conflict, non-acceptance, psychological control, parental criticism and poor parent-child relationships are more likely to develop depression (Frye & Garber, 2005; Garber et al., 1997; Puig-Antich et al., 1993).

The family may play a particularly pivotal role in shaping depression risk for sexual minority adolescents. Lesbian, gay, and bisexual (LGB) adolescents are at twice the risk of developing depression as their heterosexual peers (Fergusson, Horwood, & Beautrais, 1999). The process of coming out to one's family is associated with psychological distress and suicidality, and LGB adolescents often experience parental non-acceptance of their sexual orientation (D'Augelli, Hershberger, & Pilkington, 1998, 2001). Many LGB adolescents experience homelessness (Cochran, Stewart, Ginzler, & Cauce, 2002; Fournier et al., 2009; Kruks, 1991; Van Leeuwen et al., 2006), at least in part due to expulsion from their homes

following disclosure of their sexual orientation (Kruks, 1991). This transition thus exposes LGB adolescents to numerous risks for depression.

Peers are an especially salient socialization context in adolescence for multiple reasons, including increases in the amount of time spent with peers, the importance of peer relationships (B. B. Brown & Larson, 2009), and greater susceptibility to peer influence compared to earlier or later developmental periods (Steinberg & Monahan, 2007). As such, difficulties with peer and romantic relationships are robustly associated with depression in adolescents (Borelli & Prinstein, 2006; Daley & Hammen, 2002; LaGreca & Harrison, 2005; Rudolph & Clark, 2001). Interpersonal stressors are strong risk factors for adolescent depression. For example, romantic relationship loss predicts the subsequent first onset of major depression in adolescents (Monroe, Rohde, Seeley, & Lewinsohn, 1999). Peer stressors and peer rejection are also strongly linked to the onset of depressive symptoms, particularly for girls (Daley & Hammen, 2002; Hankin, Mermelstein, & Roesch, 2007; LaGreca & Harrison, 2005; Nolan, Flynn, & Garber, 2003). Peer victimization is a particularly salient stressor that has damaging effects on social and psychological adjustment in adolescents (Olweus, 1993; Prinstein, Boergers, & Vernberg, 2001). Peer victimization is associated with depression in both cross-sectional (Hawker & Boulton, 2000) and longitudinal studies (Storch, Masia-Warner, Crisp, & Klein, 2005; Vernberg, Abwender, Ewell, & Beery, 1992). Adolescent peer victimization also predicts depression in adulthood (Gladstone et al., 2006; Olweus, 1993), rendering these peer experiences particularly damaging. In addition to experiences of stigma and discrimination, peer victimization is elevated in LGB adolescents, who are more likely than heterosexual adolescents to be bullied, harassed, and to be victims of violence at school and in their communities (Faulkner & Cranston, 1998; Robin et al., 2002; Russell, Franz, & Driscoll, 2001; Williams, Connolly, Pepler, & Craig, 2005).

Finally, the school environment can contribute to depression risk in adolescents. Low student connectedness to school is associated prospectively with depressive symptoms in adolescents (Shochet, Dadds, Ham, & Montague, 2006). In contrast, positive student-teacher relationships increase perceptions of belonging, promote emotional functioning, and support the development of autonomy and other milestones (Kuperminc, Leadbeater, & Blatt, 2001; Roeser, Eccles, & Sameroff, 1998, 2000). Cross-sectional studies have consistently shown a negative relationship between measures of student belonging, including quality of relationships and involvement in extracurricular activities, and emotional distress (Anderman, 2002; Harrison & Narayan, 2003; Murray & Greenberg, 2000). Perceived teacher support declines over the middle school years and predicts subsequent increases in depressive symptoms (Reddy, Rhodes, & Mulhall, 2003). Chaotic school environments may be characterized by discipline problems and violence, which are in turn associated with risk for depression (O'Keefe, 1997).

Mechanisms linking the Adolescent Environment to Depression Risk

For many adolescents, the biological and psychosocial changes of early adolescence come well before they have experienced cognitive maturation that would facilitate adaptive emotion regulation. Areas of the brain that facilitate cognitive control of emotion undergo substantial maturation during adolescence. Steinberg and colleagues (2006) suggest the disjunction between early adolescent change, the emotional arousal it creates, and the absence of fully developed emotion regulation skills is a major risk factor for the development of psychopathology in adolescence. Given the myriad of changes occurring during this period, it is not surprising that adolescents perceive increases in stressors and daily hassles (Larson & Ham,

1993; Seidman, Allen, Aber, Mitchell, & Feiman, 1994; Simmons & Blythe, 1987) and experience greater negative affect and emotional lability (Larson & Lampman-Petratis, 1989; Larson, Moneta, Richards, & Wilson, 2002). Stressful events become more closely linked to the emergence of negative affect, rendering adolescents more emotionally vulnerable to the effects of stress (Larson & Ham, 1993; Larson et al., 2002). Because early adolescence is associated with a number of academic, social, and biological changes, increased stress, and greater experiences of negative affect and emotion variability, adolescents who have not developed adaptive ways to regulate and manage negative emotions may be particularly at risk for depression.

A specific aspect of emotion regulation that is consistently linked to adolescent depression is engagement in rumination (Abela, Brozina, & Haigh, 2002; Abela & Hankin, 2011; Broderick & Korteland, 2004; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007; Schwartz & Koenig, 1996). Rumination involves passively focusing on feelings of distress and thinking about their causes and consequences without initiating problem-solving behaviors (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Although rumination may occur in childhood (Abela et al., 2002), the link between rumination and depression has been identified most consistently in adolescents and adults. Rumination predicts the development of depressive symptoms (Broderick & Korteland, 2004; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, Parker, & Larson, 1994; Nolen-Hoeksema et al., 2007; Schwartz & Koenig, 1996) as well as the future onset, number, and duration of major depressive episodes (Abela & Hankin, 2011; Just & Alloy, 1997; Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2007; Robinson & Alloy, 2008). Females are more likely to engage in rumination than males, which likely contributes to the emergence of the gender difference in depression during adolescence (Hankin & Abramson, 2001; Nolen-Hoeksema & Girgus, 1994; Nolen-Hoeksema, Larson, & Grayson, 1999). Engagement in rumination has also been shown to explain sexual orientation disparities in adolescent depressive symptoms (Hatzenbuehler, McLaughlin, & Nolen-Hoeksema, 2008). Recent evidence suggests that exposure to stressful life events and peer victimization is related to increases in rumination over time in adolescents, and that these increases in rumination mediate the association between stress exposure and depressive symptoms (McLaughlin & Hatzenbuehler, 2009; McLaughlin, Hatzenbuehler, & Hilt, 2009).

An extensive body of work has documented the role of cognitive factors in increasing risk for adolescent depression, including negative attributional style, dysfunctional attitudes, and hopelessness (Gladstone & Kaslow, 1995; Hankin, Abramson, & Siler, 2001; Joiner & Wanger, 1995; Nolen-Hoeksema, Girgus, & Seligman, 1992). Some evidence suggests that these cognitive vulnerability characteristics are associated most strongly with depression following exposure to stressful life events (Hankin & Abramson, 2001; Robinson, Garber, & Hilsman, 1995), presumably because adolescents with these cognitive characteristics are more likely to interpret stressful events in a negative manner. Some have argued that as negative schemas are accessed more frequently, their negative content becomes increasingly accessible following even minor stressors (Hammen, Henry, & Daley, 2000). Negative attributional style, dysfunctional attitudes, and hopelessness are more common among adolescents exposed to maltreatment or parenting characterized by low acceptance (Alloy et al., 2001; Garber & Flynn, 2001; Hankin, 2005). Moreover, although these cognitive characteristics do not appear to differ for male and female adolescents, some evidence suggests that negative attributional style is more strongly associated with depression among females (Gladstone, Kaslow, Seeley, & Lewinsohn, 1997).

Beliefs about academic ability in particular influence both school performance and emotional adjustment in adolescents. Poor school performance can disrupt perceived and actual academic achievement, as well as feelings of success in the transition to secondary schooling. Adolescents who experience repeated academic failure may incorporate academic or career-related failure into permanent schemas surrounding their self-concept, increasing risk for depression. Students' perceived academic inefficacy has been shown to increase the risk of emotional distress and depression (Bandura, Pastorelli, Barbaranelli, & Caprar, 1999; Roeser et al., 2000). Conversely, perceived academic ability can serve as a moderator to mitigate the effects of stressful life events on the development of depression (Cheung, 1995). Minority students face unique barriers to academic success. African American students may distance themselves from their culture of origin- for example, changing their dialect or mannerisms, to succeed academically. The need to reject aspects of their culture in order to succeed academically is associated with depression (Arroyo & Zigler, 1995). Students who have had to repeat a grade or feel that they are older than most in their class experience heightened emotional distress (Resnick et al., 1997). Thus, adolescents are at increased risk for depression when they feel that they are not keeping up with their peers academically, or must compromise another aspect of their identity to do so.

Physiological factors also underlie the emergence of depression during adolescence. Adolescents with early pubertal onset experience accelerated physical development, with implications for their self-concept and relationships, yet without a parallel acceleration in social and emotional development to facilitate their adjustment (Mendle et al., 2010; Negri & Susman, 2011). Although the association between early pubertal timing and depression risk in females has been consistently documented, the pathways linking pubertal onset and depression are not well delineated. One pathway related to poor quality family, peer, and romantic relationships has been considered as both a cause and consequence of early pubertal onset. Stressors in the family environment, such as low-quality family interactions or father absence, may lead to early pubertal onset (Graber et al., 2010). Early maturing girls have lower-quality relationships with family and peers, and are at higher risk for physical and verbal abuse from romantic partners (Graber et al., 2010). The combination of early pubertal timing and subsequent stressful life events, particularly peer stressors, is associated with elevated risk for depression (Conley & Rudolph, 2009; Ge et al., 2001). The relationship between early puberty and depression may also be mediated by self-esteem and body dissatisfaction in girls (Negri & Susman, 2011; Stice et al., 2001).

Adolescence is characterized by marked increases in physiological reactivity to stress, both in the HPA axis and autonomic nervous system (Gunnar, Wewerka, Frenn, Long, & Griggs, 2009; Stroud et al., 2009). This increase in stress reactivity occurs to a greater degree for females as compared to males (Stroud, Papandonatos, Williamson, & Dahl, 2004). As noted previously, adverse events and disruptions in the family and peer environments can lead to dysregulation in physiological stress response systems. As these systems become more attuned to the social environment in adolescence, disruptions related to adverse environmental experiences may culminate in the onset of major depression. Indeed, emotional reactivity to stress in adolescence is associated prospectively with risk for the onset of major depression and significantly mediates the relationship between markers of the childhood social environment and depression (McLaughlin et al., 2010). Evidence linking dysregulation in physiological stress response systems to the subsequent onset of depression is more limited; however, one prospective study found that elevated cortisol-to-DHEA ratio (a measure of anabolic balance)

predicted major depression onset in a high-risk adolescent sample (Goodyer, Herbert, & Tamplin, 2003).

Social Ecological Factors

In earlier stages of development, socioeconomic status (SES) is associated more strongly with cognitive development and behavior problems than with depression. Beginning in adolescence, SES appears to play a more important role in the development of depression. Longitudinal evidence suggests that adolescents from low-SES families are more likely to develop major depression than adolescents from families with greater economic resources (Johnson, Cohen, Dohrenwend, Link, & Brook, 1999). Data from national surveys also indicate that major depression is more common among adolescents from low-SES families (Goodman, 1999; McLaughlin, Costello, Leblanc, Sampson, & Kessler, in press). Neighborhood factors also impinge upon adolescent development. Adolescents living in low-SES neighborhoods are exposed to numerous environmental risks including crime, violence, substance use, ambient noise, and physical disorder such as dilapidated and vacant housing, litter, and graffiti; these environmental hazards are associated with increased risk of depression (Aneshensel & Sucoff, 1996; Latkin & Curry, 2003). The broader social climate plays an increasingly important role in shaping risk for depression, particularly for sexual minority adolescents. For example, LGB adolescents are at lower risk of depression in communities with a greater proportion of same-sex couples and schools with gay-straight alliances, anti-bullying policies, and antidiscrimination policies that include sexual orientation (Hatzenbuehler, 2011). The extent to which aspects of social climate influence risk for adolescent depression in other groups is unknown but represents an important area for future research.

Conclusion

Major depression is a common condition in adults associated with substantial functional impairment. Unlike anxiety disorders and disruptive behavior disorders that have an average age of onset in childhood, depression typically begins in adolescence or early adulthood (Kessler et al., 2004). Despite the relatively late age of onset, a multitude of social, environmental, and contextual factors in childhood play a role in the etiology of depression. Beginning at birth, the social environment shapes neurobiological, psychological, and social developmental processes in ways that can increase risk for depression or protect against the disorder. Developmental psychopathology provides a framework for understanding the complex and reciprocal interplay between the developing child and the array of social contexts in which they are embedded that contribute to the accumulation of risk and protective factors for depression across the life-course. Incorporating a developmental psychopathology approach into interventions targeting depression holds promise for generating innovation approaches to treat and prevent the disorder.

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Figure 1.

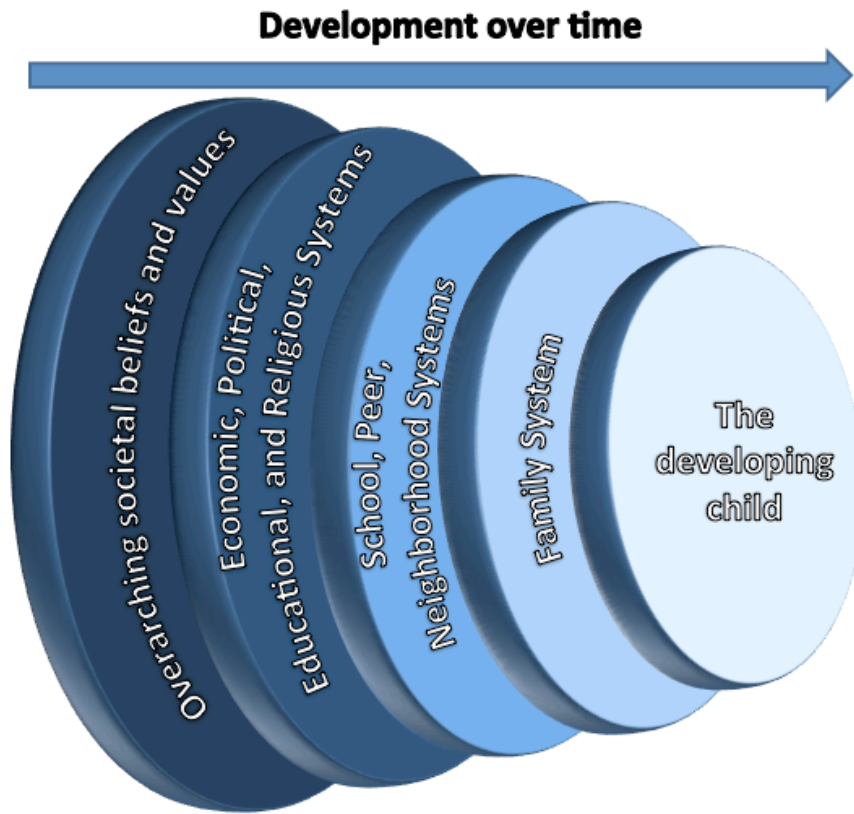


Figure caption: Developmental psychopathology framework for examining the developmental psychopathology of depression. Children are nested within numerous contexts that influence neurobiological, psychological, and social development across time in ways that increase or decrease risk for major depression.