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The Developmental Impact of Trauma

Imagine a child, a young girl, 12 years old, who is living with two loving parents in a comfortable home. Her neighborhood is safe, her school is good, her peer group is generally positive, and resources are readily available. She is a member of the majority culture, with light-colored skin, and most of the children in her neighborhood look like her and speak her language. Like all children, she has innate strengths and vulnerabilities. This child is outgoing and personable but struggles with a learning disability. Her parents, strong advocates, have worked with her school to develop an educational plan that meets her needs. Although she sometimes becomes frustrated with classwork and with her school performance, she has received supports and encouragement since her learning disability was first identified.

Take this same child but change one factor: Imagine this same child living not in a comfortable suburb, but in a family struggling with poverty. Her father recently lost his job, her mother is working two jobs, and the family lives from paycheck to paycheck. How might these circumstances change the course of her development? We can imagine ways in which it would build strengths as well as the many ways in which it would layer on challenge after challenge. Perhaps her school is less resourced. Perhaps there is less time for schoolwork or for play, as her parents rely on her to care for her younger siblings while they work. She may learn increasing autonomy, but she may also experience decreased efficacy in school settings or increased exposure to a higher-risk peer group. Her loving parents continue to play an important role as buffers and containers of stressful experience, but they may be less available or more stressed themselves. Despite all these challenges, with this single—though intense—risk factor, in the context of a safe attachment system, it is likely that this child's development proceeds on task.

Now change more variables. Rather than a member of the majority culture, what if this child belongs to an ethnocultural minority? How might that factor impact her access to resources, her felt sense of safety in the world, her sense of herself, and the perspectives of others toward her achievements and vulnerabilities? Imagine this same child, with the same innate qualities, but with one parent who is impaired or absent. Add the role of an unsafe neighborhood and community violence. Add the role of physical violence by a caregiver and frequent changes in residence or caregiver. How might each of these factors influence this child's development?

Development is dynamic. Developmental tasks build on themselves, with success and mastery at a given stage laying the foundation for potential success and efficacy at a later

one. The child, for instance, who successfully negotiates relationships with caregivers in early childhood has learned crucial skills for successful negotiation of relationships with peers in later childhood. This child has learned how to read nonverbal and verbal cues, communicate effectively, negotiate turn taking, delay gratification, and tolerate and negotiate conflict. Although these skills do not guarantee success in new relationships, they provide a foundation for the development of newer and more complex skills.

All developmental skills grow, initially, within the context of our earliest relationships and environment. The ways in which we develop are purposeful. Our skills grow in response to the input of our environments, so that we can negotiate those environments successfully. In this sense, all of development can be considered adaptive.

Use-Dependent Development

The extent to which we develop particular skills varies depending on many factors, including our need for a particular skill, our available resources, and the feedback and input we receive from the environment. For instance, a child with a sensory impairment, such as hearing loss, may show advanced development in other sensory areas, such as visual attentiveness. A child in a bilingual home may easily develop facility with two languages, even though that same child might have struggled with learning a second language had exposure occurred later, in the school setting. The frequently nurtured youngest child of loving parents may prioritize external soothing over internal regulation capacity, whereas the oldest child of more distant parents may learn to minimize emotional experience.

A key concept in understanding human development is the role of *neural plasticity:* the ability of the brain to adapt and change in response to experience. We are not born with fully developed brain structures and connections; rather, our brains develop and change in response to experience and maturation. Development of our brains is *use-dependent:* Specific changes happen in the brain in response to repeated input, or patterns. There are millions of potential synaptic connections available in our brains at birth; those that are used are strengthened and become increasingly efficient, whereas those that do not receive input are pruned away (Abitz et al., 2007).

As an example, consider the challenge of learning a foreign language. Many of us have had the experience, in adolescence or adulthood, of attempting to learn a second language. As we pronounce a word in this new language, a native speaker corrects our attempts. "It's la silla, not la see-ya." You respond, "But that's what I said!" The native speaker shakes her head and hides a smile. "No, it's not." Human spoken languages contain thousands of speech sounds that vary across cultures. At birth, children have the capacity to discriminate among *every sound in human speech*; by 10–12 months of age this capacity disappears, and we remain able to discriminate only those sounds heard in the spoken language or languages surrounding us (Werker & Tees, 1984). Through auditory input alone, our brains improve some connections (those involved in our native language) and prune away those auditory pathways that have not been used. In this manner, development is purposeful and specific.

Like all other variables, trauma and adversity shape development (Cicchetti & Toth, 1995, 2005, 2015; Pynoos, Steinberg, & Wraith, 1995; Streeck-Fischer & van der Kolk, 2000; Schore, 2013; Spinazzola et al., 2014. The experience of complex trauma in childhood has been associated with a host of negative outcomes and risks, some of which are

detailed in the Introduction. Rather than framing these as "pathology," many of these outcomes can be understood as arising from core developmental deficits in *intrapersonal competencies* (e.g., sense of self and self-development); *interpersonal competencies* (e.g., capacity to form and engage in relationships with others); *regulatory competencies* (e.g., capacity to recognize and modulate emotional and physiological experience); and *neurocognitive competencies* (e.g., capacity to engage executive functions and other cognitive abilities to act meaningfully on the world). There are two primary mechanisms through which complex developmental trauma can be conceptualized as having its impact:

1. The prioritization of certain developmental tasks and skills—typically, those skills relevant to the child's survival.
2. The interference with other developmental tasks—frequently, those most dependent on the availability of a safe attachment system and context.

The Attachment, Regulation, and Competency (ARC) treatment framework focuses on both of these mechanisms by working with children and caregivers to recognize danger signals, differentiate current and past dangers, build skills in managing these responses, and lay the foundation for the development of competencies across domains—while supporting caregivers in their efforts to provide a safe context in which their children may do so.

Our understanding of the developmental impact of trauma, around which the intervention targets of ARC are built, are discussed in this chapter and the next. First, we discuss the tasks of normative development and the ways in which developmental trauma may interfere in task completion. Second, we present a three-part model for understanding current behaviors and responses as adaptive skills and responses that have grown in service of ensuring the child's survival.

Tasks of Childhood and the Impact of Developmental Trauma

Early Childhood (Infancy through Preschool)—Normative Development

In the first year of life, the child is busier, by far, than at any other time in the lifespan. The young child is learning the essential building blocks that will shape the remainder of his development. The child is learning that he *exists* as a separate entity from those individuals surrounding him; he is acquiring the foundations of *connection* in building his earliest relationships within the dyad and familial system; he is building early *affect tolerance and regulation* strategies through the coregulation provided by his caregivers; he is *exploring* his world and establishing the foundational understanding that will serve in problem solving and awareness of objects and space; and he is developing a basic sense of *agency,* or the awareness that he has the capacity to have an impact upon the world.

The earliest understanding of self, other, and self in relation to other grows in the context of the attachment relationship. At birth, a child has little awareness of self as separate and no capacity to discriminate among internal needs and states. As the caregiver responds sensitively and discriminately to the infant's cues and needs, she gradually develops a sense of self and an awareness of bodily cues. The infant and young child learn the rudiments of interpersonal interactions, including how to interpret others' expressions and how to communicate needs effectively, within the context of the attachment system (Kelly, Morisset,

Barnard, Hammond, & Booth, 1996). Effective communication bids are reinforced when the child's needs are attended to, and she gradually develops skill with communication. Similarly, understanding of others' communication strategies grows as the child learns to interpret caregivers' facial expressions, vocalizations, actions, and other cues. When these predictably match, the child develops a frame for understanding her caregivers' communications. As the child is gradually exposed to a greater number of interactions, her repertoire for understanding communication grows. Simultaneously, systems of meaning about self, other, and the world are growing, albeit in a purely nonverbal, emotion-based manner. The child who receives relatively consistent, sensitive responses from caregivers develops a basic sense of safety in the world, an understanding of others as responsive and trustworthy, and an understanding of the self as worthy of care (Bowlby, 1958; Ainsworth & Bowlby, 1991).

Early regulation occurs in the context of coregulation: The infant depends on the caregiver to provide soothing, comfort, and stimulation (Schore, 2001b). Arousal often increases rapidly when immediate needs are not met, and emotional experience appears "splintered"—infants are calm *or* upset, but generally not somewhere in between. It is over time, in response to consistent soothing, that infants and toddlers learn how to flow through emotional states and develop primitive self-soothing techniques. Importantly, it is through this process that infants learn a tolerance for emotional states: When arousal escalates, infants begin to understand that it will not last forever, and that strategies exist for making it settle or disappear.

In a safe-enough system, the young child will begin to explore his world. Exploration moves from sensory to physical, as the child sees, touches, tastes, smells, and begins to act on the environment. It is through this exploration that the child begins to develop a sense of *agency,* or a belief in his capacity to have some impact on the world. When the toddler knocks over a tower of blocks—and it falls!—he learns that his actions create a *reaction* in the world. When he does it again—and it falls again—he learns that his power is sustainable, and that there is consistency and predictability in external response.

Along with connecting action to response, infants and toddlers are also making connections among sensory stimuli and meaning. The smell of the mother may be connected to comfort, the voice of the father connected to playtime, and the bark of the dog connected to fear. These early connections, laid down prior to the acquisition of language, are solidified and held internally on a nonverbal level, and they may elicit memory and response even much later in life. Many of us have had the experience of walking down a street, smelling something, and being hit by a wave of emotion—often, in the absence of a capacity to identify a specific memory tied to the smell. Sensory connections built early in life are often strong and long-lasting.

There is an increasing focus on agency and independence as young children approach the preschool years and explore the limits of what they are capable of, as well as the limits of the boundaries placed around them. Preschoolers are particularly tuned in to structure, repetition, and security: This is the age when children watch the same movie over and over, prefer the same bedtime story each night, and focus strongly on "rules" as inviolable. The repetition is soothing, but it also provides important information as children are building their understanding of the ways in which the world works.

Preschoolers have little sense of time and space, and their interpretation of the world is concrete and immediate. If something goes wrong, it's because either *you* did something or *I* did something—abstractions do not come into play. Past experiences that are salient may be

described as if they happened yesterday, whereas experiences that did happen yesterday, but are not salient, are rapidly gone from the young child's consciousness. Tomorrow, a week from now, and a year from now have equivalent meaning to the preschool-age child, unless anchored in concrete terms.

Early Childhood—Trauma Impact

Bruce Perry, a researcher examining the impact of abuse and neglect on very young children, once stated, "It is an ultimate irony that at the time when the human is most vulnerable to the effects of trauma—during infancy and childhood—adults generally presume the most resilience" (Perry, Pollard, Blakley, Baker, & Vigilante, 1995, p. 272).

Consider the developmental tasks described above and begin to superimpose, for instance, a home that is marked by chaos, in which the child receives inadequate and unpredictable care. There is sporadic response to needs, and the child's communication bids are ineffective. Caregivers' responses may be unpredictable, and facial expressions, verbal cues, and actions are inconsistent. The child, then, is left with no frame in which to interpret communicative experience. The child may adapt by communicating more strongly (e.g., frequent fussiness, constant bids for attention) or by minimizing communication bids altogether, particularly if these bids rarely lead to positive responses but instead to punishment. These deficits in interpersonal communication continue as the child progresses through toddlerhood and preschool (Coster, Gersten, Beeghly, & Cicchetti, 1989). The child may be overly vigilant toward peer and teacher expressions of danger or anger, may misinterpret cues, and may have difficulty negotiating early relationships. Preschoolers may continue to build defenses against emotional experience and/or connection to others, or may become overly clingy and needy with those around them in an attempt to get their needs met (Egeland, Sroufe, & Erickson, 1983; McElwain, Cox, Burchinal, & Macfie, 2003; Stronach, Toth, Rogosch & Cicchetti, 2013; Tarren-Sweeney, 2013; Vondra, Barnett, & Cicchetti, 1990).

When the child in this stressed environment experiences affective and physiological arousal, soothing and regulation may occur inconsistently or not at all, and in fact the child's affective states may be met with anger or threat. In the absence of adequate self-soothing strategies, and without available external regulation, the child is exposed to overwhelming arousal (Schore, 2014; Schore, 2001a). As connections and understanding about experience begin to be laid down, the inadequately soothed child learns that emotions, themselves, are frightening, and that arousal in the body is a potential danger. The young child may begin to disconnect from or guard against physical experience, or may express arousal and affect through behavior and action (Erickson, Sroufe, & Egeland, 1985; Naughton et al., 2013; Schuder & Lyons-Ruth, 2004; Yoon, Steigerwald, Holmes, & Perzynski, 2016). As the child progresses through preschool age, self-soothing strategies may continue to be primitive, and the building of increasingly sophisticated strategies that are part of normative development does not occur: In the face of ongoing levels of challenging arousal, the child must continue to rely on earlier skills.

In the absence of a safe system, the young child's tendency to explore the external world will be impacted. A child of an unpredictably responsive caregiver may sacrifice exploration in service of remaining close to the caregiver, whereas a child of a consistently rejecting caregiver may explore regardless of environmental cues signaling danger. As exploration is impacted, so, too, is agency. The child in the stressed environment has less control, less

impact, and a less predictable understanding of the world, and often begins to internalize a sense of helplessness (Crittenden & DiLalla, 1988; van der Kolk, 2015). This pattern may continue through the preschool age, as the child either continues to sacrifice exploration or begins to develop age-inappropriate independence. Loss of structure and safety—a staple at this developmental stage—will lead the young child to develop rigid control strategies to manage anxiety (Main & Cassidy, 1988). Behaviorally, these strategies may appear as bossiness, lying, or manipulating, among other possibilities.

For the infant and young child exposed to chaos, violence, or neglect, interpretation of sensory stimuli will become infused with danger. At this stage, given nonverbal processing, cues of potential danger will generalize and be solidified without language; later in life, these same cues may trigger a danger response without the child knowing or understanding its origins.

Elementary School/Middle Childhood—Normative Development

During the elementary school years, children expand their worlds beyond their immediate family circle, with gradually increasing ties to and investment in the worlds of school, community, and the peer group. Although caregivers remain the primary target of attachment, there is a gradual increase in the importance of peers.

Children at this age show an increase in independent functioning, paralleled by a strong investment in industry, or personal accomplishments. As children are exposed to the world beyond their family, they discover that they are able to produce, create, and accomplish using internal assets, and the development of pride in these accomplishments plays a strong role in continued identity development. An understanding of individual attributes gradually grows from the concrete and absolute (e.g., "I'm a girl," "I'm smart") to the more abstract and nuanced (e.g., "I'm pretty good at math, but I have a hard time with reading"; "People think I'm funny"). During this time period, children are actively building the "filter" through which they will later interpret experience. A child who typically has positive achievements in school is building a belief in the self as academically competent. A child who typically does well in peer relationships is building a belief in the self as interpersonally competent. Continued experiences will expand, be integrated into, or be rejected by these filters through processes of accommodation and assimilation (Piaget, 1952).

Cognitive skills continue to develop, but children throughout the elementary school years remain reliant on concrete information in their meaning-making efforts. The power of abstract thinking does not fully emerge until the end of this stage, so interpretation of the world continues to focus on those factors immediately at hand. Similarly, although an early understanding of time and space emerges, children continue to focus largely on present experience.

Elementary School/Middle Childhood—Trauma Impact

As domains of functioning expand through development, so too does the impact of trauma, and children affected by trauma will demonstrate impairments in competent development across domains. Notable at this stage are impairments in peer and school functioning, as these are two primary domains of competence at this stage. Children who have not learned how to successfully interact with their earliest caregivers have greater difficulty developing

competent and/or adequate relationships with their peer group or with other adults, such as their teachers (Anthonysamy & Zimmer-Gembeck, 2007; Kim & Cicchetti, 2010; Shields, Ryan, & Cicchetti, 2001). Loss of early exploration and failure to develop a sense of agency may begin to impact children's capacity to perform and sustain performance in the school setting (Carrion & Wong, 2012; Shonk & Cicchetti, 2001).

During this stage, competent performance is increasingly reliant on an array of skills. Positive school achievement, for instance, may require cognitive ability but also hinges upon the capacity to concentrate, ability to modulate arousal levels, ability to regulate behavior and control impulses, frustration tolerance skills, and interpersonal relationship capacities. Children who have experienced trauma may have impairments in any or all of these domains. Challenges in these areas may lead increasingly to the experience of felt failure; these experiences then generalize to other arenas, as children overestimate their lack of competence (Vondra, Barnett, & Cicchetti, 1989; Dvir, Ford, Hill, & Frazier, 2014).

Continued failures of development take an increasing toll on children's sense of self, and the beginnings of a negative self-concept and self-blame are internalized. As with all children, those from stressed environments are actively constructing their filter of self, other, and the world. Repeated experiences of failure or lack of competency in relationships, in academic achievement, and in other developmental domains will reinforce a belief in the self as inadequate or incompetent (Runyon & Kenny, 2002; Toth & Cicchetti, 1996). Unlike securely attached children, the belief system of children from stressed environments is often more rigid—an adaptive quality applied when life involves frequent and absolute discriminations between safety and danger—which means there is less room within belief systems for accommodation and assimilation. Experiences that conflict with a negative sense of self may be rejected as aberrations or exceptions, rather than incorporated. During the latter half of this stage, early signs of helplessness and hopelessness may emerge (Kim & Cicchetti, 2006).

Relationships with others may be similarly rigid: Whereas securely attached children approach relationships flexibly, with differing styles for differing relationships, children from stressed attachment systems may replicate their early attachment styles in new relationships, approaching others with a basic sense of mistrust (Lynch & Cicchetti, 1991). This approach is adaptive: If a child has developed a belief that others are dangerous, through multiple experiences of danger within relationships, it is in that child's best interest to believe that *all* others are dangerous, unless proven otherwise. The result, however, is a significant challenge in building relationships with potentially safe others, including the child's peer group, teachers, and other adults. In the face of the self-protective signals the child puts out, others may respond in kind: For instance, few people want to approach a child who clearly communicates "Back off!" with her behavior, her language, and her facial expressions. In this way, the cycle is perpetuated: The child further solidifies the foundational belief that others are rejecting, and those in the surrounding system develop a belief that the child is disinterested in relationships.

Because of the limitations of the growing child's skill set, as well as the restricted circles of functioning, coping with and expressing emotional and physiological experience at this age is largely managed through behavior and interaction. The range of potential behavioral expressions is wide. Children may act out and become aggressive or bullying; may appear hyperactive, silly, or have difficulty managing behavioral arousal; or may withdraw, constrict, and shut down (Alink, Cicchetti, Kim, & Rogosch, 2009; Ford et al., 1999; Hebert, Parent, Daignault, & Tourigny, 2006; Yoon et al., 2016).

Adolescence—Normative Development

Adolescence is a time period marked by rapid changes: Cognitive abilities develop, social skills and perspective-taking abilities mature, and physiological development changes rapidly. The adolescent must negotiate all of these changes and integrate them meaningfully. Among other primary tasks, the adolescent is actively constructing a coherent sense of identity, a complex understanding of *self*.

The formation of identity happens both in comparison and in contrast: "I am like my peers in this way"; "I am different from my parents in that way." As the adolescent engages in self-reflection and evaluation, others may notice that, like very young children, teens appear self-absorbed. During this developmental period, however, the self-absorption of adolescents is due less to a lack of *awareness* of the outside world, as it is in infancy and early childhood, and more to an excruciating awareness of how the outside world may be viewing and evaluating *them*.

Along with the growth of a sense of self comes healthy separation and individuation from the early caregiving system. As a means toward accomplishing this, adolescents increasingly turn to their peer group as a source of reference, information, and support. However, although the peer group grows in importance, parents and primary caregivers in a healthy caregiving system remain an important "safety net" for adolescents in times of uncertainty and distress.

Because of the desire to define the self, adolescence is often a time of extremes. Adolescents experiment, try on, and discard different roles in a search to discover their own "identity." They play with body image, sexual image, and self-concept. They develop often strongly held views and judgments, which begin to temper as they move into adulthood.

Adolescence is the first developmental stage in which the future becomes real and meaningful: Unlike younger children, adolescents can draw connections between past, present, and future and can view themselves at a future point in time. Adolescents are not, however, efficient yet at connecting current actions to consequences and the role these play in the achievement of goals; this is a skill that develops over time, as cognitive structures become increasingly mature.

Adolescence—Trauma Impact

Adolescence is a particularly high-risk time for youth who have been exposed to trauma (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Layne et al., 2014). In this time of rapid change, self-assessment and self-critique, and extremes of experience, adolescents who have not yet developed the skills to regulate their own experiences and interactions may become increasingly disconnected and disenfranchised. For youth who already feel different—and often damaged—as a result of their early experiences, the belief that others are examining them as intently as they are examining themselves can lead to a painful self-consciousness and crystallization of a negative self-identity.

The strong emotions of adolescence place traumatized youth at high risk. In the absence of the more sophisticated strategies normatively developed, traumatized adolescents may continue to rely on more primitive coping strategies. Some adolescents may rely on overcontrol and perfectionism, constricting their emotional experience and their interactions with others. Other adolescents rely on external means of modulation, including substance use, cutting, sensation-seeking behaviors, and sexual interactions (Ballard et al.,

2015; Kilpatrick et al., 2003; Lansford, Dodge, Pettit, Crozier, & Kaplow, 2002; Layne et al., 2014; Noll, Shenk, Barnes, & Haralson, 2013). The increased independence that comes with adolescence means that the nature of available coping strategies will carry increased danger: Whereas a 5-year-old may have a temper tantrum in the face of significant dysregulation, a 17-year-old is able to drink to excess and then drive erratically.

Individuation and separation are challenging for adolescents whose internal sense of self is fragmented. Those adolescents whose trauma was chronic or began early in life may continue to rely on dissociative coping, and depersonalization and derealization become prominent at this age (Haugaard, 2004; Putnam, 1997; Schimmenti & Caretti, 2016). This disconnect across aspects of experience—and a feeling of separation from the self and the world—may cause adolescents to sublimate their own goals, opinions, and values. Adolescents may be at particular risk for negative peer influence and affiliation, or they may isolate themselves and withdraw from peer interactions. At the extreme, adolescents are at risk for revictimization by both peers and adults (Auslander, Tlapek, Threlfall, Edmond, & Dunn, 2015; Barnes, Noll, Putnam, & Trickett, 2009). Ultimately, the adolescent's identity may involve splintered aspects of self, which are not integrated into a coherent whole.

Early Adulthood—Normative Development

Although this book focuses primarily on youth, the children of today are the adults of tomorrow, and many clinicians and systems will work with youth into their young-adult years. Therefore, brief attention is given to these early transition years into adulthood.

In normative development the transition into adulthood is marked by increasing solidification of a sense of identity: From the 20s to the 30s, adults have a growing consciousness of and comfort with aspects of self. Often, this sense of self evolves into an awareness of self across context and self in multiple roles: as a daughter or son, a spouse, a parent, a worker, a friend. Although the adult may be conscious of ways in which different aspects of self manifest more or less strongly in different environments or in different roles, there is a general coherence in the understanding of self and identity.

In early adulthood there is a growing emphasis on engagement in some meaningful occupation or industrious output, and as time progresses, there is evaluation and reevaluation of life choices. Although the normative time frame for "commitment" to a career path, interpersonal relationship choices, and other life decisions has increasingly shifted, by the late 20s to early 30s, many adults are generally able to visualize and define significant life choices.

During these years, the healthy adult is generally able to function independently, though others will often be utilized as a source of instrumental or emotional support. Attachment targets shift toward partners and children (Dinero, Conger, Shaver, Widaman, & Larsen-Rife, 2008; Simpson, Collins, Tran, & Haydon, 2007), and healthy attachment patterns are typically repeated with the next generation (Benoit & Parker, 1994; van IJzendoorn, 1995). Cognitive and interpersonal capacities increase in complexity, and the healthy adult is able to take perspective; use abstract thought; and link past, present, and future actions and experiences. In fact, having developed fully and prior to the start of any real aging process, executive function and other cognitive capacities are thought to reach their peak in the late 20s (Ostby et al., 2009; Tamnes et al., 2009). As a result, the adult can "think on his or her feet," solve problems, juggle multiple tasks, and engage and concentrate attention.

Young Adulthood—Trauma Impact

As childhood developmental tasks coalesce into the complex functioning of adulthood, the young adult who has experienced chronic early trauma may show significantly impacted functioning across domains. Sense of self and identity may be increasingly splintered and fragmented, with lack of integration across time, experience, and context (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997; Reviere & Bakeman, 2001; Schimmenti & Caretti, 2016; Wolff & Ratner, 1999). Self-concept may rigidly incorporate the negative frames developed in earlier childhood, including self-blame, guilt, shame, damage, and powerlessness (Brock, Pearlman, & Varra, 2006; Liem & Boudewyn, 1999).

Interpersonal capacities may continue to be impacted in adulthood. Just as secure attachment patterns repeat across generations, so, too, do anxious ones (Lyons-Ruth, Yellin, Melnick, & Atwood, 2005; Main & Goldwyn, 1984; van IJzendoorn, 1995; Verhage et al., 2016), and the adult who has experienced early interpersonal challenges may have difficulty forming healthy mature relationships. Relationships may be marked by overdependence and intense need; conversely, the young adult may isolate him- or herself or have relationships that are maintained by keeping others "at arm's length," marked by superficiality or constriction.

Difficulties with the regulation of emotional and physiological states may continue into young adulthood, and in fact may become more extreme or entrenched. With continuing exposure to overwhelming affect and arousal, the young adult may increasingly rely on rigid, primitive strategies for coping (Choi, Choi, Gim, Park, & Park, 2014; Fortier et al., 2009; Lyons-Ruth, Dutra, Schuder, & Bianchi, 2006; Min, Farkas, Minnes, & Singer, 2007). Vigilance toward the environment and intense arousal responses may be followed by numbing and disengagement, such that the adult lives in intense states of hyper- or hypoarousal, or in wildly swinging mood states that vacillate between the two (Dvir et al., 2014; Ford, 2005; Ford, Stockton, Kaltman, & Green, 2006; Lanius et al., 2010). Although cognitive capacities are generally complex and nuanced at this stage, the young adult who has experienced trauma may continue to show significant deficits in key capacities such as executive functions and memory (Bremner, 1999; Bremner et al., 1995; Navalta, Polcari, Webster, Boghossian, & Teicher, 2006; Nikulina & Widom, 2013; Philip et al., 2016). Furthermore, these cognitive processes may break down in the face of danger or overwhelming stress, as the survival response prioritizes other capacities. As a result, functioning across domains may be state-dependent, with capacity for accomplishment and positive functioning largely a result of the adult's level of internal regulation. Conversely, the increased cognitive capacities of adulthood may allow the adult to "hold it together," functioning in an apparently coherent way and competent in one or more contexts, while inwardly or in other contexts experiencing significant dysregulation or collapse.

Developmental Resilience

It would be remiss to discuss the impact of traumatic experience on child development without also highlighting the remarkable nature of human resilience. The concepts of stress and resilience are intertwined; the latter does not exist without the presence of the former. The study of resilience grew from the study of risk, as attempts to understand the impact of overwhelming experience on outcomes highlighted the fact that in *every* population of highly

stressed individuals studied by researchers, there were individuals who not only survived but thrived. The field of resilience research grew, as attempts were made to better understand what factors predicted more positive outcomes.

Although many definitions of *resilience* exist, the one that speaks to us is the following: "The process of, the capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (Masten, Best, & Garmezy, 1990, p. 426). By this definition, every child we have seen is resilient, in some way and on some level. If a child is sitting in our office, then that child has successfully adapted to his or her world—at least long enough to physically survive the circumstances. Successful adaptation may manifest in many ways, and often in ways that seem counterintuitive. For instance, a child who is labeled *manipulative* and a *liar* (common descriptors of a neglected child) is often a child who has successfully adapted to a world in which needs are not met by finding ways to meet those needs. A child who appears emotionally shut down may be a child who has successfully adapted to a failure of caretaking by minimizing access to emotional experience. In the next chapter we discuss why children's behaviors nearly always make sense, given an understanding of the context in which they develop.

Ultimately, though, our goal is for children to do more than physically survive; we want them to adapt successfully to a world that goes beyond the context of danger and deprivation. By understanding factors that promote resilience, we are able to target and support those factors. At core, it is our belief—as individuals who work with children exposed to traumatic stress and given an understanding that trauma derails healthy development— that our primary treatment goal is to build those factors that lead to competent and healthy development.

The Building Blocks of Resilience

Factors that lead to healthy development in children exposed to significant stress can be broken into two broad categories: those that are *internal* to the child (e.g., temperament, specific developmental skills) and those that are *external or contextual,* including both familial and environmental/systemic contributions (Masten & Coatsworth, 1998). Ideally, our work targets both of these areas. Not surprisingly, the relative importance of factors shifts across the course of development: What is vital for an infant will vary from that which is most important for an adolescent. A number of researchers have made significant contributions to our understanding of risk and resilience by studying differential outcomes among high-risk populations, and/or by examining the protective role of developmental assets in population-based samples of youth (Cicchetti & Curtis, 2007; Cicchetti & Rogosch, 2009; Cicchetti, Rogosch, & Toth, 2006; Haggerty, Sherrod, Garmezy, & Rutter, 1996; Masten et al., 1990; Masten & Coatsworth, 1998; Urban, Carlson, Egeland, & Sroufe, 1991; Werner & Smith, 1980, 2001; Wyman et al., 1999). We draw from these sources to highlight some of the building blocks of resilience.

Individual/Child Factors

When addressing the developmental assets of childhood, it is important to emphasize that even those factors described as "individual" or internal grow best within the foundation of a safe, surrounding caregiving system. Across developmental periods we see the crucial

impact of *internal working models* (Bowlby, 1958), as each developmental period highlights factors relevant to *models of self* (e.g., self-efficacy and independence) and *models of other* (e.g., social orientation and ability to build positive relationships). Also highlighted across developmental stages is the role of the child's ability to regulate experience (e.g., frustration tolerance, cognitive regulation, behavioral control), a set of skills that grows largely from external supports in normative development.

INFANCY

In infancy the strongest predictors of outcome are a positive temperament (e.g., affectionate, good-natured, routine sleeping/eating habits) (Smith & Prior, 1995; Wyman et al., 1999) and a secure attachment style, with the latter viewed as both predictor and outcome (Cicchetti et al., 2006; Kim & Cicchetti, 2004; Rothbart, Ahadi, & Evans, 2000). At this stage the caregiving system serves as our primary target for intervention (Lieberman & van Horn, 2008; Scheeringa & Zeanah, 2001).

PRESCHOOL AGE

Two primary factors emerge among resilient preschool-age children: a growing sense of autonomy and some capacity for social orientation. Resilient preschoolers are described as having some sense of self and the ability, to an age-appropriate degree, to provide themselves with structure (Mendez, Fantuzzo, & Cicchetti, 2002). Ability to manage emotions is important, with frustration tolerance particularly predictive (Mischel, Shoda, & Rodriguez, 1989; Shoda, Mischel, & Peake, 1990). In relationships with others, resilient preschoolers are able to seek and elicit support.

MIDDLE CHILDHOOD

The building of a self-perceived sense of efficacy and personal competency is most predictive of outcome at this stage. Across studies, elementary-school-age children who have positive outcomes have been able to develop areas of esteem and efficacy (Bolger, Patterson, & Kupersmidt, 1998; Kim & Cicchetti, 2003). Resilient children are able to make use of a reflective cognitive style, taking the time to think rather than reacting impulsively (Cicchetti, Rogosch, Lynch, & Holt, 1993; Shoda et al., 1990; Zelazo, 2001). They have, to some degree, an internal locus of control and believe in their capacity to influence their world (Wyman, Cowen, Work, & Parker, 1991). In the face of adversity, these children are flexible in their use of coping strategies and have a range of ready skills, including the use of humor. With others, these children are socially oriented and have more positive relations with peers and adults than their less resilient counterparts.

ADOLESCENCE

Primary factors predicting resilient outcomes among adolescents include a sense of personal responsibility and social maturity. Adolescents who do well have a belief in their ability to exert some control over their own fate, and they have a desire to do so (Campbell-Sills, Cohan, & Stein, 2006). They are, to some degree, achievement oriented and can function

independently. They have internalized a set of values and are able to draw on these in decision making. They are able to interact with others, are socially perceptive, and have built relationships (Resnick et al., 1997).

Systemic/Contextual Factors

External factors may include familial context or relationships, peer group, school factors, and/or community supports and resources. The role of relationships appears to be crucial (Werner & Smith, 2001; Wyman et al., 1999). Across studies, perhaps the most consistent predictor of resilience for high-risk children is a safe, nurturant bond with a single person (e.g., grandparent, teacher, sibling) (Chandy, Blum, & Resnick, 1996; Dexheimer Pharris, Resnick, & Blum, 1997; Flores, Cicchetti, & Rogosch, 2005; Wyman et al., 1991). Peer relationships are also important, with resilience predicted for children who have at least one close friend and who are able to maintain friendships over time.

Familial values and socialization practices may be protective. Research highlights the importance of communicating positive expectations to youth, including familial expectations for age-appropriate roles of responsibility—a practice that may foster the child's sense of efficacy (Lipschitz-Elhawi & Itzhaky, 2005). Other family factors include faith or religious practices, reliable emotional support from caregivers, and encouragement of emotional expressiveness (Werner & Smith, 2001).

A great deal of research supports the important contribution of the child's school experience to the building of resilience. Although academic achievement is viewed as a benchmark of competence, equally important in the study of resilience is the child's engagement with and relationship to the school setting (Resnick et al., 1997). Not surprisingly, children who feel positively about their school and their own connection to it do better than those children who do not. School factors that increase this connection include an emphasis on child strengths, awareness of the importance of feedback and praise, availability of roles and tasks that promote trust and responsibility, academic and behavioral standards and expectations, and positive child–teacher relationships.

Beyond home and school, children and families do better when they receive support from and are connected to the larger community. Availability of kinship supports and neighborhood resources may buffer stressed children and families (Jaffee, Caspi, Moffitt, Polo-Tomás, & Taylor, 2007). The importance of youth expectations extends to their role within their larger world, with resilience predicted for youth who feel able to make a contribution to their community.