Routledge
Taylor & Francis Group

Drivers of human development: How relationships and context shape learning and development[1]

David Osher[a], Pamela Cantor[b,c], Juliette Berg[a] , Lily Steyer[b] , and Todd Rose[c,d]

[a]American Institutes for Research; [b]Turnaround for Children; [c]Harvard Graduate School of Education; [d]The Center for Individual Opportunity

ABSTRACT

This article synthesizes knowledge on the role of relationships and key macroand micro-contexts - poverty, racism, families, communities, schools, and peers - in supporting and/or undermining the healthy development of children and youth, using a relational developmental systems framework. Relationships with parents, siblings, peers, caregivers, and teachers are explored in the context of early care and childhood settings, schools, classrooms, and school-based interventions. Additional contextual factors include; chronic stress, institutionalized racism, stereotype threat, and racial identity. A companion article focuses on how the human brain develops, and the major constructs that define human development, the constructive nature of development, and the opportunities for resilience. Human development occurs through reciprocal coactions between the individual and their contexts and culture, with relationships as the key drivers. Relationships and contexts, along with how children appraise and interpret them, can be risks and assets for healthy learning and development, and their influence can be seen across generations and can produce intra- as well as intergenerational assets and risks. This knowledge about the individual's responsiveness to context and experience has both positive and negative implications across early childhood, adolescence and into adulthood. Sensitive periods for brain growth and development are considered within the contextual factors that influence development including; parental responsiveness and attunement, intentional skill development, mindfulness, reciprocal interactions, adversity, trauma, and enriching opportunities. The accumulated knowledge on human development and the power of context and culture can inform child-serving systems that support positive adaptations, resilience, learning, health, and well-being.

This article presents a picture of the macro- and micro-contexts that shape children's developing brains and their overall development. We examine the ways in which individuals and contexts come together through relationships that are affected by both positive and negative developmental factors (e.g., stress, attunement, and support). Developmental Systems Theories (DST; e.g., Ford & Lerner, 1992; Overton, 2015) provide a framework to integrate the underlying processes of neural malleability and plasticity with the dynamic relational interconnectedness of children and the adults with whom they interact in their social, cultural, and physical contexts (Bronfenbrenner, 2005; Overton & Müller, 2012). Viewed this way, children grow as individuals, in culture and context, producing unique individual (idiographic) developmental pathways across the lifespan (Overton, 2010). Although everyone's developmental history is unique, individuals influence each other;

they contribute to and are influenced by the idiographic pathways of others. In this article, we integrate and synthesize research on the influences of key contexts and relationships within contexts in young people's lives that drive their development over time, and address growth and malleability throughout the life course.

Along with the companion article entitled, "Malleability, Plasticity, and Individuality: How Children Learn and Develop in Context," this article synthesizes convergent bodies of knowledge across diverse scientific disciplines within a DST framework. The integration of knowledge within this framework enables us to see that child development is neither genetically predetermined nor governed by a "nature versus nurture" dichotomy (Fischer & Bidell, 2006; Oyama, 2000). Rather, development is a constructive enterprise shaped by ongoing, reciprocal interactions between children's biology, their developing brains,

---

CONTACT Juliette Berg jberg@air.org American Institutes for Research, 1000 Thomas Jefferson Street NW, Washington, DC 20007, USA.
[1]References in this document are illustrative due to space constraints and do not represent all citations used to inform this review. Please see online extended reference list for the full set of citations that helped inform this review.

and their physical and social contexts, with the latter playing a defining role. Of particular importance, among the reciprocal coactions between the individual in their contexts and culture, are the significant relationships in each microsystem context that children experience directly and how children appraise and interpret their relationships and experiences (Slavich & Cole, 2013).

The findings presented in the article come from a variety of correlational, longitudinal, and causal studies; our approach was not to rely solely on causal evidence, but rather to triangulate across multiple sources. First, we solicited and reviewed recommendations for critical works from experts in the identified scientific fields. Next, we systematically and comprehensively identified and reviewed meta-analyses, peer-reviewed literature reviews, and handbook chapters that synthesized research over the last two decades. In some cases, we supplemented these sources with empirical and/or theoretical studies to nuance and validate our findings. Our sources either integrated an area of research with an established body of knowledge or presented findings that have been reproduced in multiple studies. We tempered our language where the literature shows less consistency because the science is more nascent and/or pronounced disagreements remain. To vet our source selections and validate our findings, we sent multiple drafts to experts in relevant fields and conducted two face-to-face invitational meetings (in October 2016 and June 2017) at which we presented the final research report and the companion manuscripts (Berg, Osher, Cantor, Steyer, & Rose, 2016; Osher, Cantor, Berg, Steyer, & Rose, 2017a, 2017b). This article and its companion piece update our findings and situate them within a powerful, unifying framework that integrates bioecological, relational, and contextual factors.

Dynamic development systems theory as an organizing framework

Development is "always development in context," and is shaped by all the contexts that the developing child and youth experiences (Goodnow & Lawrence, 2015). DST provides a flexible, constructive framework that enables us to both capture the richness and complexity of development in a bioecological context (Bronfenbrenner, 2005; Fischer & Rose, 2001; Overton & Müller, 2012) and to explain its diversity and variability—from the expression of genes at the cellular level and the secretion of chemical hormones to the expression of behaviors and the appraisal and processing of experience. The framework enables us to view children's development as embodied, contextualized, and socially and culturally

situated, which is understood in their ecologies and affected by the ecologies of those who interact with them (Bornstein, 2015; Bronfenbrenner & Morris, 2006; Cairns, 1979; Gibson, 1979). When the framework incorporates a phenomenological component (Spencer, 1995, 2007), it allows us to examine the role of context, culture, intra-subjective experiences, and social and emotional states, appraisal, meaning making, and other factors in explaining human development. In particular, the framework allows us to examine the variability and stability in developmental range, sequencing, and pacing of behavior, complex skill acquisition, adaptive capacities, resilience, and performance, and how these become stable and transferable to new situations over time (Bornstein, 2017; Fischer & Bidell, 2006). Skill development and meaning making are contextually and culturally circumscribed. Mental and physical activities perform specific functions in specific settings and are interpreted both within and across contexts.

All children are vulnerable. Micro- and macro-contexts provide risks as well as assets that can prevent the actualization or impacts of risk, reduce a child's *net vulnerability* (i.e., history of one's prior experiences and coping outcomes), and foster resilience. In so doing, contexts support learning and healthy development (Fischer & Bidell, 2006; Spencer, Swanson, & Harpalani, 2015). The processes through which ecologies affect development can be observed in individuals at neuro-biological, physiological, phenomenological, behavioral, and social levels. Whether in the home, in schools, or in other child-serving settings, relationships characterized by sensitivity, attunement, consistency, trustworthiness, cognitive stimulation, and scaffolding enable children to develop secure attachments and mature in progressively complex ways (Bornstein, 2015; Center on the Developing Child, 2016; Fischer & Bidell, 2006; Li & Julian, 2012; Thompson 2015). Children's patterns of development remain responsive to relationships, experience, meaning making, and context throughout their life course, offering opportunities to buffer and overcome the effects of risk factors throughout the developmental continuum.

Development occurs within interlinked bioecological contexts that encompass an array of environments and societal structures (Bornstein & Leventhal, 2015; Bronfenbrenner & Morris, 2006). These include the differential allocation of risk (e.g., exposure to violence) and hegemonic belief systems that legitimate or ignore the impacts of privilege (e.g., Gay & Kirkland, 2003; Spencer, 2017). Structural and social features of developmentally rich contexts support development (and buffer the effects of adversity) when they foster adults' capacities to attune with and support children and to

teach, model, and coregulate the development of social, emotional, and cognitive competencies. Developmentally rich contexts can function as a "constructive web" through which complex dynamic skills are developed and positive adaptation is fostered (Fischer & Bidell, 2006). Such experiences lead to the integration of neural structures that establish representational templates through which future experiences are interpreted, reappraised, and processed (Siegel, 1999). The adaptations that young people make to one context can carry over to other contexts, thereby enabling them to succeed in environments that pose new and differing challenges. Meanwhile, developmentally unsuitable, insufficiently supportive, and culturally incongruent contexts can exacerbate stress and hinder the development of foundational competencies, which include bonds that children make with adults, skills to cope with and manage stressful conditions, and the regulation of emotion and attention to effectively engage and accomplish goals (e.g., Farmer, Dawes, Alexander, & Brooks, 2016; Stafford-Brizard, 2016).

Relationships as drivers of human development: Positive supportive contexts

Relationships between and among children and adults are a primary process through which biological and contextual factors influence and mutually reinforce each other. Relationships that are reciprocal, attuned, culturally responsive, and trustful are a positive developmental force between children and their physical and social contexts. Such relationships help to establish idiographic developmental pathways that serve as the foundation for lifelong learning, adaptation, the integration of social, affective, emotional, and cognitive processes and will, over time, make qualitative changes to a child's genetic makeup (Bornstein & Leventhal, 2015; Bronfenbrenner & Morris, 2006).

That relationships are important is not new knowledge (e.g., Luthar, 2006; Masten, 2014; National Scientific Council on the Developing Child, 2004). However, a need exists to operationalize "relationship" in a manner that accounts for the power of relationships to shape development in constructive ways. Li and Julian (2012) operationalize "developmental relationships" as having four characteristics: enduring emotional attachment, reciprocity, progressive complexity of joint activity, and a power balance that allows for transferability to new settings. They hypothesize that these four factors are the active ingredients in effective interventions across settings. Developmental relationships are also characterized by attunement, social synchrony, compassionate communication, co-regulation, support,

modeling, consistency, trustworthiness, cognitively stimulation, and a caregiver's capacity to accurately perceive and respond to the child's mental state (e.g., Bergin & Bergin, 2009; Bornstein, 2015; Li & Julian, 2012; Siegel, 2012). Support must also be developmentally constitutive in a manner that aligns with a child's social-historical life space; provides emotional security, information and knowledge; and helps children develop age-appropriate skills (Thompson & Goodvin, 2016). Developmentally constitutive relationships can be incorporated into the design of practices and interventions seeking to support performance and promote the development of complex skills, adaptive capacities, and resilience, particularly among students from environments that place them at higher levels of risk.

Developmentally constitutive relationships with adults, along with supportive environments, are foundational to healthy development (Baumeister & Leary, 1995; National Academies of Sciences, Engineering, and Medicine, 2016). Developmental relationships allow caregivers to care for the physical and emotional needs of infants and children and support the integration of social, affective, emotional, and cognitive processes (Center on the Developing Child, 2016; Siegel, 2012). The caregiver's capacity to accurately perceive and respond to the child's mental state are important for building shared experiences and emotions (Bornstein, 2015; Siegel, 2012) and for the development of self-regulation (e.g., Main, 1991). Early and ongoing developmental relationships at home and at school promote balance between self-regulatory systems and contribute to the child's capacity to regulate emotions, behavior, and cognition; to develop a sense of agency; to feel connected to other people; and to establish an autobiographical narrative (Bronfenbrenner, 1979; Murray, Rosanbalm, Christopoulos, & Hamoudi, 2015). These relationships build upon early attachment relationships which establish a secure base for exploration and a safe haven, which continue to be important for learning and development (Ainsworth & Bowlby, 1991; Bowlby, 1988; Cassidy, Jones, & Shaver, 2013). Perceived support is more strongly related to psychological well-being than other dimensions of support (Thompson & Goodvin, 2016), and is affected by how developmental relationships are experienced, processed, and remembered—phenomenological factors that can be shaped by social-cognitive factors such as parent-child discourse and culture (Cassidy & Shaver, 2008; Thompson 2015).

Role of ecological contexts

Human behavior and development take place in nested ecological systems, which affect development directly

and indirectly through effects on individuals and practices (e.g., Bronfenbrenner & Morris, 2006). Ecological contexts encompass an array of relationships, environments, and societal structures (e.g., Holman, Garfin, & Silver, 2014). Ecological contexts and the individuals embedded in them are characterized by continual interactions within and across levels and by great variation in internal as well as external risk and protective factors. Margaret Beale Spencer (2007) describes it this way:

> Risks and protective factors may take a variety of forms given variations in race/ethnicity, gender, faith, community, body type, immigration status, skin color, privilege, health quality or disability status, cultural traditions, social class, and temperament. All are linked to the character of the context and the individual's history of experiences and even the group's history in the nation. (p. 840)

For each individual, net level of stress is the effect of the stresses actually experienced and the factors that buffered the experiences to prevent the damaging effects of stress (Spencer, 2007, 2017).

The characteristics of contexts matter. A developmentally rich context can provide safe, secure, enriching opportunities and developmental relationships with adults; direct targeting of self-regulation; executive function; and social and behavioral skills, opportunities for practice and reinforcement of these foundational competencies, and opportunities to take on leadership roles and participate in collaborative and productive peer interactions (e.g., Jones & Bouffard, 2012; Lerner, 2004). Structural and social features of schools and early childhood educational settings that provide a developmentally rich context can enhance developmental range, buffer the effects of stress and trauma, promote resilience, and accelerate the development and integration of affective, cognitive, social, and emotional processes. Developmentally unsuitable, insufficiently supportive, and culturally incongruent contexts can exacerbate stress; hinder the reinforcement of foundational competencies; and impel maladaptive behaviors by failing to foster healthy relationships with adults, limiting enrichment and stimulating experiences, and reducing the chances of interacting with peers who are positive influences (e.g., Farmer et al., 2016). Young people who experience recurring and continuous negative contexts cease to recognize them as abnormal and become habituated to these contexts (Siegel, 1999).

The effects of one context can carry over to other contexts. One setting can positively affect another setting. For example, one study found that high-quality early child care improved mother-infant interactions among families living in or near poverty (Luthar, Crossman, & Small, 2015; Vandell, Belsky, Burchinal, Vandergrift, & Steinberg, 2010). One setting can also buffer or exacerbate the negative effects of another setting. For example, problematic family functioning can exacerbate the risks of community violence (Luthar et al., 2015). Sociological studies of housing policy provide another example. Housing policy, which reflects historical policy choices (as well as institutionalized racism and white privilege (e.g., de jure until the 1960s) and de facto housing segregation), affects wealth accumulation and sets the stage for neighborhood effects. These, in turn, affect parenting, peer relationships, school resources, processes and opportunities to learn, along with student attendance (Perkins & Sampson, 2015; Tolan, 2016; Wadsworth, Evans, Grant, Carter, & Duffy, 2016).

Similarly, adaptations that children and youth make in one context carry over to other contexts. Children and youth cope with stress and adversity, including identity threat, in ways that may be adaptive or maladaptive. The result will depend on alignment between contexts, which makes transfer easier. Adult support can promote positive adaptation. This occurs when adults (e.g., teachers) are able to understand the origin of a problematic behavior in another context and provide the child with attuned, developmentally appropriate, and culturally competent psychological support that helps the child meet the expectations of the new context (e.g., Pierce, Gould, & Camiré, 2017; Spencer, 2007). Although some social and emotional skills may be domain specific (e.g., skills learned through sports; Pierce et al., 2017), social and emotional learning programs can intentionally support skill transfer (Yoder, 2014). Similarly, adults can provide a web of support that helps children and youth develop cultural competence, a capacity to code switch, and the ability to employ socially effective scripts when encountering challenging and identity-assailing situations (Oppedal & Toppelberg, 2016), all of which can help children and youth adapt to environments that have differing behavioral expectations and pose differing challenges (e.g., Goodnow & Lawrence, 2015; Jakonen, 2016; Spencer, 2017).

Microsystem contexts

Developmental relationships occur in microsystem contexts—communities and neighborhoods, families, child care, schools, and peers—whose composition, culture, and structure constrain or foster these relationships. Relationships within these systems are affected by other ecological systems as well as by cultural factors, the attributes of individual children and adults, and the

child's developmental stage. Although these factors are co-influential, for heuristic purposes, we discuss the four primary microsystem contexts separately along with the relationships that most regularly occur in these settings.

Microsystems "invite, permit, or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment" (Bronfenbrenner, 1994, p. 39). They include families, early care and learning settings, schools, peers, religious institutions and faith communities, youth development programs, drop-in centers, cultural institutions and settings, gangs, and juvenile justice institutions. Each microsystem provides opportunities for social learning and can affect social, emotional, and cognitive development through the quality of relationships and the extent to which children and youth experience safety, connectedness, engagement, challenge, and opportunities to develop competencies and access supports—both positively (e.g., enrichment and social and emotional learning) and negatively (e.g., bullying and engagement in high-risk behaviors). We focus on four key systems: families; early care and childhood settings; schools; and peers.

Families

Family resources, social supports, emotional climate, and stability, along with positive mental models and supportive caregiver-child interactions and relationships, are essential if families are to provide the bonding, connection, and safety necessary for healthy development (Bornstein, 2015; Patterson & Hastings, 2007). Insufficient space or privacy, environmental toxins, and housing insecurity are examples of resource-related factors that can affect the quality of social, emotional, and cognitive developmental context insecurity (e.g., Diette & Ribar, 2015) and can contribute to increases in student mobility, childhood stress, and self-regulation challenges (e.g., Herbers, Reynolds, & Chen, 2013; Rumberger, 2003).

Grandparents, siblings, and other kin often play key roles. For example, 7% of children in 2010 lived in households headed by a grandparent and 17% of children living with grandparents were being raised in homes with no biological or adoptive parent present (U.S. Census Bureau, 2010). Some are children of incarcerated parents and face particular social, emotional, and academic challenges (e.g., Eddy, Cearley, Bergen, & Stern-Carusone, 2014). Although research on grandparents is limited, the preponderance of available research suggests that grandparents can be important support systems for and positive influences on their grandchildren (Luthar et al., 2015; Powell, Hamilton,

Manago, & Cheng, 2016). Siblings also matter. Siblings may spend more time with one another than with their parents (Lucey, 2010). Sibling effects can be positive or negative, can be direct or indirect (through effects on parents and teachers), and may affect social, emotional, and cognitive development (e.g., McHale, Updegraff, & Whiteman, 2012). Kin who do not live in the household may support family capacity and extend the family's resources by providing social, cultural, and financial capital (Stack, 1974).

Relationships with caregivers

The caregiver–child dyad plays a foundational role in the development of children's social, emotional, and cognitive skills (National Academies of Sciences, Engineering, and Medicine, 2016). Parents play a key role in five relational domains, each of which has its own developmental course and set of regulatory mechanisms: protection, mutual reciprocity, control, guided learning, and group participation. Each domain is activated under different conditions, involves a different parent–child relationship, requires different parenting responses, and is associated with different outcomes (Grusec & Davidov, 2016). Parenting practices (and their mental models) are shaped by parents' own experiences and circumstances; practices they learn from their social networks; cultural and societal beliefs and norms; supports available to them within communities, institutions, and policies; and children's individual and developmentally specific demands (National Academies of Sciences, Engineering, and Medicine, 2016). Six parenting practices are particularly important for supporting physical health and safety, emotional and behavioral competence, social competence, and cognitive competence in children (National Academies of Sciences, Engineering, and Medicine, 2016): (a) contingent responsiveness: adult behavior that occurs immediately after a child's behavior and is related to the child's focus of attention; (b) showing warmth and sensitivity; (c) routines and reduced household chaos; (d) shared book reading and talking to children; (e) practices that promote children's health and safety such as prenatal care and ensuring adequate nutrition and physical activity; and (f) use of appropriate (less harsh) discipline. Parental inputs are effective when children feel that their parents consistently care for them, are sensitive to their needs, understand them, and have their best interests at heart (Grusec & Davidov, 2016).

There are also some universally harmful practices, which include harsh punishment, unresponsive parenting, hostility, lack of psychological support, and lack of autonomy and monitoring as children mature

(e.g., Grusec & Davidov, 2016; Luthar et al., 2015). Maltreatment by caregivers is one of the most powerful disrupters of child adjustment (Luthar et al., 2015). Maternal experiences of childhood maltreatment (e.g., Jouriles, McDonald, Slep, Heyman, & Garrido, 2008) has been associated with offspring childhood maltreatment and adjustment problems (Berlin, Appleyard, & Dodge, 2011; Plant, Barker, Waters, Pawlby, & Pariante, 2013).

The role of parents continues to be important through adolescence and young adulthood, although the range and depth of parental control change as children work out the developmental challenge of individuation (Smetana, 2011) and extend their life space to more complex engagement in social fields that include school, peers, and work. For many adolescents, the opinions of peers become more important than those of family (e.g., Blakemore & Mills, 2014). Parents can still affect their children's development and life course trajectories through attachment-based support, limit-setting, autonomy, and monitoring of their children's behavior as well as by creating and supporting access to healthy social environments (e.g., Blakemore & Mills, 2014; Luthar et al., 2015). The combination of high levels of warmth and developmentally appropriate discipline (i.e., authoritative parenting style) is most beneficial, and the level of warmth and control that adolescents respond positively to is contextual and culturally dependent (Luthar et al., 2015). Providing these parenting characteristics well requires skill and, in some cases, support. Many adolescents increasingly want and strive for autonomy, differentiated identity, and an increased role in family decisions (Beveridge & Berg, 2007), although different adolescents' push toward increased autonomy occurs at different rates and for different types of issues (Smetana, 2011). Because parents and children may perceive risk and their children's competence differently (as well as parental behavior), parents who are more accurate in their ability to understand their adolescents' thought processes are likely to realize better outcomes in conflicts (Hastings & Grusec, 1998; Holmbeck & O'Donnell, 1991; Smetana, 2011). Parents who have better relationships with their children also realize better results from monitoring their children (e.g., Abar, Jackson, & Wood, 2014).

Parents may need additional support, whether due to stress, motivational issues, skills, or resources (e.g., Semke, Garbacz, Kwon, Sheridan, & Woods, 2010). Work demands can affect parents' levels of monitoring and control. Limited financial resources can affect parental access to social, cultural, and liquid financial assets that middle class parents can more easily leverage to improve learning and health outcomes for their children (e.g., Osher & Chasin, 2016). Still, many parents who struggle with poverty provide their children with effective care and supervision, leveraging both their personal skills and social capital (e.g., J. Smith, Brooks-Gunn, & Klebanov, 1997).

Early care and childhood settings

Early care and education settings are, next to the family, the most important social contexts in which early development unfolds. Child care and other early childhood settings affect development during a highly sensitive period of brain development. Children tend to enter early care within the first few months of life and spend approximately 36 hours a week there. Early care and education (ECE) quality varies but tends to be mediocre with regard to the capacity to promote positive developmental outcomes (e.g., Institute of Medicine [IOM] & National Research Council [NRC], 2015b). Research suggests that the magnitude and sometimes the direction of child care effects on development may be markedly different for children from higher risk contexts and that access to quality care is limited by family economic resources and geography (Berry et al., 2014; Donoghue, 2017; Sandstrom, Giesen, & Chaudry, 2012).

Effective child care settings have high adult–child ratios, small group sizes, developmentally appropriate curriculum, safe physical environments to support positive interactions, and effective instruction (Center on the Developing Child, 2016), and staff are well trained, supported, and compensated (O'Connell, Boat, & Warner, 2009). These effective settings provide ample opportunities for frequent, warm, and responsive interactions with adults through language- and relationship-rich environments (e.g., Center on the Developing Child, 2016). This often includes experiential learning, which enables children to incorporate and use knowledge (Blair & Raver, 2014). Pretend play, when combined with other instructional strategies such as child-centered classrooms and playful learning, is an important context for learning and development in early childhood (e.g., Lillard et al., 2013; Snow, 2016). Child care settings that have a clear focus on social and emotional learning and on developing self-regulatory skills (including executive functions) can build greater school readiness, and these efforts can be enhanced by more intensive, targeted social interventions and social and cognitive skills training (e.g., Flook, Goldberg, Pinger, & Davidson, 2015).

One factor that reflects quality is the high rate of suspensions and expulsions in ECE (U.S. Department of Education, Office of Civil Rights, 2014). The high rates reflect staff and center capacity, but the disparities appear to be due to implicit bias, which, as indicated later, is also a problem in K–12 education (e.g., National

Association for the Education of Young Children, 2016). Expulsion rates are 13 times higher in federally funded child care centers than in K–12 classrooms (Gilliam & Shahar, 2006). Black preschoolers are 3.6 times more likely to receive one or more suspensions than White preschoolers are. Boys are three times more likely than girls to be suspended.

Schools

Schools are dynamic, multilevel, multilayered contexts for human development where teachers, peers, classrooms, public spaces and structures, culture, composition, policies, and student attributes influence each other (Crosnoe & Benner, 2015; Pianta, 2016). These co-influential interactions produce differential effects that can be studied and understood at both an individual and subgroup level over time (e.g., Beltz, Wright, Sprague, & Molenaar, 2016; Kremer, Flower, Huang, & Vaughn, 2016).

Schools can be designed and organized in ways that support students by providing a web of support and fostering developmental relationships for students with their teachers and peers (Crosnoe & Benner, 2015; Osher & Kendziora, 2010). These relationships are key drivers of learning and development (e.g., identity) and are co-influential. Schools support developmental relationships when they foster key conditions for learning: emotional, intellectual, and physical safety; connectedness; support; challenge; engagement; respect; and agency (e.g., Berkowitz, Moore, Astor, & Benbenishty, 2016). The classroom is the most proximal school setting for establishing developmental relationships. Positive classroom climates support students' social and emotional development and help them be effective learners (Hamre & Pianta, 2010). Schools with instructional and curricular designs that support learner-centered instruction and learning environments that successfully integrate affective, cognitive, social, and emotional processes with curricular content accelerate the developmental range of students (Hammond, 2016; Jones & Bouffard, 2012; Osher et al., 2016).

Schools that are culturally responsive and competent help build conditions for learning and support development while reducing cognitive load and minimizing the tensions and the demands on psychic energy created by culturally challenging schools. Culturally challenging schools require additional attention for some students, who expend mental and emotional energy on hostile environments, thereby taking away cognitive and emotional energy for learning and socialization (e.g., Boykin, 1986, 2000; Spencer, 2017). Culturally competent schools create conditions that support family engagement and cultural responsiveness by building staff cultural proficiency and cultural humility (Hook et al. 2016; Hook & Watkins, 2015), by regularly assessing how school policies and assessment procedures, as well as staff attitudes and practices, differentially affect culturally and linguistically diverse students and families, and by changing policies and practices that privilege some students and disadvantage others (King, Sins, & Osher, 2007; Osher, Cartledge, Oswald, Artilles, & Coutinho, 2004).

Culturally responsive approaches scaffold learning by helping connect learning and instruction to students' individual experiences, cultural resources, and needs with an appreciation of individual variation and an understanding of the effects of macro-system factors on opportunities to learn (e.g., Gay, 2000; Spencer, Swanson, & Harpalani, 2015). Leveraging prior knowledge, experience, and interests can reduce cognitive load and mental effort, creating space for new learning (see companion article for a deeper discussion of how leveraging prior knowledge and experience can improve learning). Culturally responsive approaches support opportunities to learn for all students by supporting communication between teachers and students (Gay, 2000; Hammond, 2016). Schools can be designed to address the individual needs of the most vulnerable children while leveraging their strengths and, simultaneously, creating conditions and opportunities that support the engagement and learning of all children.

When the design and organization of schools do not foster conditions for learning, student-centered instruction, and cultural responsiveness, schools can actually harm students both immediately and over time. For example, classroom climates characterized by conflict are associated with poorer peer relations, more aggression, and poorer outcomes including academic focus and performance (e.g., Jones & Bouffard, 2012). Over time, adverse experiences in school can lead to a cascade of negative academic and behavioral transactions that can lead children to withdraw and become less motivated, leading to greater gaps in school performance and achievement (e.g., Masten et al., 2005; Ursache, Blair, & Raver, 2012). This disengagement can contribute to poor attendance and grades in core classes, grade repetition, and discipline actions, including suspension, that can, in turn, lead to dropout and school failure (Kendziora, Osher, & Carey, 2014). Exclusionary discipline provides an example of school-created adverse effects: the use of exclusionary discipline contributes to the experience of shame, student disengagement, grade retention, dropout, and arrests (e.g., Mallett, 2015). Exclusionary discipline can negatively affect the learning, engagement, and sense of safety of

students who are not suspended (e.g., Perry & Morris, 2014). Even one suspension increases the risk of repeating grades, school dropout, and incarceration and reduces the likelihood of postsecondary success (Arcia, 2006).

Relationships with teachers and other adults

Teachers matter for student motivation, engagement, learning, behavior, and psychological support (Pianta, 2016). Student-teacher relationships are important, particularly for students who are at elevated levels of risk (Hamre & Pianta, 2005). Emotionally close, trustful relationships with nurturing teachers and high teacher responsiveness foster positive development and learning (e.g., Jones & Bouffard, 2012). Teachers' explicit expression of high expectations and belief in students' capabilities correlate with successful achievement (e.g., Steele, 2010). Positive relationships with teachers promote self-regulation, which supports children's classroom behavior and, in turn, contributes to positive classroom climates. Positive climates are associated with school success-related skills and dispositions, such as greater cognitive and academic competence, self-esteem, school satisfaction and engagement, higher attendance, and less acting out (Hamre & Pianta, 2005). Positive relationships with other school staff that occur outside the classroom, and mentoring relationships benefit students in similar ways (D. L. DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011; Rhodes, 2004).

Positive developmental relationships with teachers which can help children modulate stress reactivity can also provide working models for students about the process of learning. Developmental constitutive relationships can contribute to relational trust (Bryk & Schneider, 2003) when students view teachers as reliable and trustworthy sources and teachers view students as effective learners (e.g., R. E. Mayer, 2014). Students who have close relationships with teachers are more confident and positive in their approaches to learning and are more comfortable asking for help (IOM & NRC, 2015a). Positive student–teacher relationships can help students achieve, engage, regulate their emotions, build social competence, and take on academic challenges. High-quality teacher–student relationships may also (with other teacher strategies) reduce stereotype threat (Steele, 2010), protect students who are at higher levels of risk for poor outcomes (e.g., Roorda, Koomen, Spilt, & Oort, 2011), and buffer the effects of victimization and other adversity (e.g., Norwalk, Hamm, Farmer, & Barnes, 2016). Together, the neural integration of affective, cognitive, social, and emotional processes that are vital to student motivational states

and successful learning reflect the power of these developmentally constitutive relationships, particularly when combined with a well-designed mastery learning framework. (See the companion article for a full discussion of mastery learning and the role of relationships in neural integration and motivation.)

The power of positive developmental relationships with teachers for promoting student outcomes appear to be driven by the extent to which the relationships contain social synchrony and emotional attunement, foster opportunities to learn (including time on task, mentoring, and modeling), and increase student concepts of themselves as learners (e.g., Gregory & Korth, 2016; Li & Julian, 2012). Teacher capacity includes the technical, pedagogical, social, and emotional skills to teach content, manage classrooms, and develop supportive and culturally responsive relationships (e.g., Doyle, 2006; Osher, Bear, Sprague, & Doyle, 2010). Effective teaching depends on teacher qualities which include teacher social and emotional competence, the ability to accurately interpret student cues, and the ability to listen to students and to understand the meaning of student behavior (Everston & Weinstein, 2006; Jennings & Greenberg, 2009).

Classroom management and instructional practices that employ communication and positive interactions as a way to increase engagement and maintain appropriate levels of arousal support the development of students' emotion regulation, executive functions, and academic skills (e.g., Zelazo, Blair, & Willoughby, 2016) and contribute to positive self-representations and more positive responses from others (e.g., Murray et al., 2015). For example, reflective reprocessing of information and re-appraising of prior knowledge and experience is thought to be necessary for the development of executive functions and to reduce cognitive load and can be encouraged through intentional instructional practices (Zelazo, 2015). Meditation, problem-solving tasks, and video gaming tasks are instructional practices that can develop executive function skills and the likelihood that they are activated in future activities (e.g., Galinsky, Bezos, McClelland, Carlson, & Zelazo, 2017).

Effective instructional practices, support for student behavior, and positive classroom climates can counter the effects of chronic stress on students and improve outcomes for students who are at high levels of risk (e.g., Kellam et al., 2011). Conversely, negative interpersonal transactions that include infrequent positive teacher support and attention during academic learning, lack of teacher praise, and limited opportunities to respond (e.g., Sutherland & Oswald, 2005), as well as teacher stereotype priming (Steele, 2010) can increase

stress. Heightened stress and anxiety can reduce working memory and lead to trouble paying attention in class and completing work, especially for students struggling with regulating behavior in social situations in school and at home. These social and classroom behaviors lead to negative perceptions and expectations on the part of both the student and the teacher regarding the student being poorly regulated, not capable, and unable to learn. This can contribute to negative reinforcement, negative student self-identities, student learned helplessness, and a teachers' sense of inefficacy (e.g., R. C. Mayer, Davis, & Schoorman, 1995). Psychological distress or appraisals of events as stressful or challenging are, in turn, associated with impairments in self-regulation (e.g., Duckworth, Kim, & Tsukayama, 2013).

Teacher well-being and working conditions are important (Pianta, 2016). Many educators are challenged by excessive cognitive demands, lack of cultural and linguistic competence and humility, or an inability to attune to the development needs of children or to respond to the impacts of trauma on children and adults (Baird & Kracen, 2006). Teacher stress matters and is affected by the teacher's own ecology, which includes the level of principal support, job stress, and teacher ability to manage student feelings and behaviors (e.g., Jennings & Greenberg, 2009; S. M. Johnson, Kraft, & Papay, 2012).

Findings from evaluations of school-based interventions, including ones that monitor student and teacher cortisol levels, suggest that teacher stress affects interaction with students, student stress levels, teacher behavior, and student academic outcomes (e.g., Flook, Goldberg, Pinger, Bonus, & Davidson, 2013). Reducing teacher stress through interventions such as mindfulness interventions can reduce student stress biomarkers (e.g., Jennings & Greenberg, 2009; Oberle & Schonert-Reichl, 2016). Adults in schools and other agencies need effective preparation, training, and support, including positive conditions for teaching and supporting diverse children and youth. Staff benefit from respectful and supportive leadership and strategies that address stress and provide guidance on managing classroom and other setting dynamics (e.g., Farmer et al., 2016).

Peers

Peers are important socializing agents, both directly and indirectly through their effects on teachers and other adults. Adults intentionally and unintentionally structure peer relationships, which can be more or less promotive of healthy behavior and development. For example, scaffolded peer interactions such as social dramatic play, can be important for the development of executive function skills (Blair & Raver, 2014). On the other hand, peer-group interventions that aggregate peers who exhibit high-risk behaviors can reinforce problem behaviors (Dishion, McCord, & Poulin, 1999). Although these effects may often be unintentional, these adult structured peer effects can be influenced by the abilities of adults to attune to the need for inclusiveness and belonging in children and youth (e.g., Hamm, Farmer, Dadisman, Gravelle, & Murray, 2011). Peer interactions are also affected by individual child characteristics. Characteristics such as arousal responsiveness that have neurobiological roots, social and social-cognitive skills, and cultural competence shape the nature and quality of peer interactions such as rejection, exclusion, friendship, and popularity (Rubin, Bukowski, & Bowker, 2015). For example, children with hostile attributions of intent to peers are more likely to be aggressive toward peers (De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002).

Among young children, scaffolded peer interactions (e.g., social dramatic play) can be important for the development of executive function skills (e.g., Center on the Developing Child, 2016). As children mature, peer relationships become more central and complex and serve as venues to acquire prosocial norms, perspective taking, social communication, and concepts of self in relationships (e.g., Rubin, Coplan, Chen, Buskirk, & Wojslawowicz, 2005). Peer relationships help children and adolescents understand themselves and their values, which can be important for identity development (Parker, Rubin, Price, & DeRosier, 1995). Having friends has been shown to decrease loneliness, increase self-esteem, promote school satisfaction and engagement, avert some victimization, and, through support, to buffer the mental health consequences of bullying and hypothalamic-pituitary-adrenal axis dysregulation (Adams, Santo, & Bukowski, 2011; McLaughlin, Hatzenbuehler, & Hilt, 2009). Peer interactions, however, can also reinforce risk-taking and antisocial behaviors through modeling and reinforcement, particularly when in groups unaccompanied by adults (e.g., Silva, Chein, & Steinberg, 2016).

Peer effects can best be understood transactionally (Dishion & Tipsord, 2011; Hicks et al., 2014). An individual child's affective, social, emotional, and cognitive characteristics can support developmental relationships with peers, and these relationships, in turn, provide opportunities to practice and refine self-regulation, executive function, and interpersonal and communication skills in ways that adult interactions may not. Bidirectional influences can be positive or negative and can have short- and long-term effects. For example,

withdrawn or anxious children are more likely to be rejected, which then makes them feel more anxious (Rubin et al., 2015). Early peer acceptance or rejection, which is affected by cognitive and emotional processes including social information processing (i.e., how children understand and interpret social situations; e.g., Lemerise & Arsenio, 2000) affects later cognitive, emotional, and behavioral development (Hay, Payne, & Chadwick, 2004). Young children who exhibit aggressive behaviors and are rejected by peers are at greater risk for later antisocial behavior than children who exhibit aggression and are not rejected (Coie, Terry, Lenox, Lochman, & Hyman, 1995). Bullying, victimization, and rejection in school, which can dysregulate stress responses, can have significant effects on long-term physical and mental health (Prinstein, Rancourt, Guerry, & Browne, 2009; Vaillancourt, Hymel, & McDougall, 2013).

These transactional peer processes can be understood ecologically within the dynamic contexts in which they occur, and young people can be susceptible to the positive and negative influences of peers at various times. Peers socialize each other in the classroom, school, and community through social learning, reference group effects, and peer pressure in dyads and groups (e.g., Snyder, Schrepferman, Bullard, McEachern, & Patterson, 2012). As discussed earlier, teachers and other adults intentionally and unintentionally play a role in structuring peer relationships, and this structuring is affected by their ability to attune to students (Farmer, Lines, & Hamm, 2011; Norwalk et al., 2016). Adults can organize contexts in ways that promote development. For example, scaffolded peer interactions in ECE can support the development of executive function skills (e.g., Blair & Raver, 2014; Center on the Developing Child, 2016). On the other hand, contexts characterized by peers who bully, family violence, teachers who ignore or dismiss bullying, and negative school climates encourage peer victimization among older children (Espelage & De La Rue, 2011).

Macrosystem factors

Research often neglects the impact of macro-level factors at the microsystem and exosystem levels (Spencer, 2007). Children and adults experience macrosystem factors regularly and directly. Macrosystem factors are operationalized through rituals, policies, protocols, routinized practices, and opportunity structures. Children and adults experience macrosystem factors directly through attitudes, behaviors, and routines that affect how children experience and react to environments and indirectly through social stigma

and exposure to contexts where opportunities for enrichment and choice are limited or absent (e.g., Oyserman & Lewis, 2017). Consistent with DST, macrosystem and microsystem contexts are interlinked and exert powerful effects on development. Structural macrosystem factors institutionalize practices, as in the case of public and private housing policy that promotes housing segregation which, in turn, affects wealth accumulation. Harmful structural macrosystem factors can also be buffered by beneficial factors, such as connection to neighbors, neighborhood collective efficacy, and sense of belonging, and by positive microsystem contexts, including developmental relationships with family members, teachers, and peers (Luthar et al., 2015). Cultural macrosystem factors are hegemonic beliefs and mindsets such as victim-blaming approaches to understanding social problems that ignore or deemphasize the impacts of history, context, and privilege (Lee, 2010; Ryan, 1972).

Poverty and racism, both separately and together, make the experience of stress and adversity more likely for children and adults who must deal regularly with the consequences of economic hardship and prejudice in their daily lives in contexts that ignore the omnipresent effects of racism (Spencer, Swanson, & Harpalani, 2015). These effects may be visible in the moment (e.g., a racial slur), or they may be emergent and only visible upon analysis (e.g., racial disparities that are the product of multiple small and often subtle steps; Osher, 2015). They can also be indirect, such as the impacts of housing segregation on the differential resources available for schools under local funding formulas (Cutler & Glaeser, 1997).

Poverty

Poverty is an ecological risk factor which makes children and youth's access to developmentally rich experiences and opportunities more difficult and makes it more likely that they will experience stress-producing adversity and health challenges (Lerner, 2004). Absent intervention, poverty-related risk factors increase the odds that children will exhibit more behavioral problems, diminished self-regulation, including executive function, and lower social and emotional competence (Blair & Raver, 2016; West, Denton, & Reaney, 2001). The effects of poverty and resilience are mediated and moderated by family and community social and emotional resources, social networks, service systems and interactions with parents, grandparents, kin, teachers, and peers.

Poverty can contribute to an accumulation of parental and child stressors, such as crowded housing and housing insecurity, as well as class-based identity

threats (Sennett & Cobb, 1972). Poverty can limit support for dealing with these stressors, including access to high-quality health care, and this, in turn, can diminish developmental opportunities (e.g., Blair & Raver, 2016). Caregiver experience of chronic stress can lower their ability to buffer their children's stress through attunement, warmth, and sensitivity, and can contribute to heightening the stress response in children (Duncan, Magnuson, & Murnane, 2016; S. B. Johnson, Riis, & Noble, 2016). In this way, experiences of stress can have effects on the development of foundational competencies such as self-regulation (Blair & Raver, 2016; Lee, Siegle, Dahl, Hooley, & Silk, 2015). Particularly in chaotic or stressful environments, children can adapt to harsh or inconsistent parenting in ways that contribute to antisocial behavior (e.g., Mills-Koonce, Willoughby, Garrett-Peters, Wagner, & Vernon-Feagans, 2016; Patterson & Hastings, 2007). Poverty can get "under the skin" through the response to stress and, affecting social, emotional, cognitive, and physical development (e.g., Blair & Raver, 2016).

ECE settings and schools amplify the effects of poverty-related macrosystem factors. Children who are economically disadvantaged are more likely to have less access to robust academic opportunities (Gustafsson et al., 2014) and experience a disproportionate number of underprepared teachers (U.S. Department of Education, Office of Civil Rights, 2014), punitive environments, and policies that run counter to how children learn and develop (e.g., Nance, 2013). In K–12 education, economically disadvantaged students are more likely than other students to attend schools that feature exclusionary discipline, police presence, a higher proportion of teachers who cannot address students' learning needs, and poor conditions for learning (Kupchik & Ward, 2014; Sass, Hannaway, Xu, Figlio, & Feng, 2012).

Although poverty makes poor outcomes more likely, family assets can protect children from the negative consequences of poverty. Family assets that include social networks (DiMaggio & Garip, 2012) and cultural resources, such as religious institutions, can help families address the impacts of poverty. The seminal examination of parenting in Philadelphia by Furstenberg, Elder, Cook, Eccles, and Sameroff (1999) identified the diversity of parenting strategies in high-need neighborhoods and how parents used their knowledge and social capital to protect their children and maximize the children's success.

Ecologically embedded sources of chronic stress and its effects on children and families is not limited to those affected by poverty. For example, children and youth in affluent communities face sources of chronic stress, such as high workloads among parents, which can affect parental attunement, and high pressures to excel at home and at school (Coley, Sims, Dearing, & Spielvogel, 2017). Recent research suggests these sources of stress are associated with elevated risk for substance abuse, social and emotional maladaptation, and risky behaviors (Lund, Dearing, & Zachrisson, 2017; Luthar, Small, & Ciciolla, 2017; Luthar, Barkin, & Crossman, 2013).

Racism

Racism is both ubiquitous and omnipresent. It is operationalized across ecological systems (Lee, Spencer, & Harpalani, 2003) and experienced by children and youth both directly and indirectly. Institutionalized racism drives (and has driven) structural inequalities that are related to poverty, labor market segmentation, and an absence of wealth accumulation (e.g., Reardon & Bischoff, 2011). Processes that lead to associations between racism and children's learning and development are both historical and in the moment. They occur at the individual level as well as in the microsystem, mesosystem (i.e., a system of two or more microsystems), exosystem (i.e., relationships between two or more settings, one of which does not contain the developing person), and macrosystem (e.g., Bronfenbrenner & Morris, 2006; Dupree, Spencer, & Spencer, 2015). The stresses created by the experience of racial aggressions and microaggressions can embed in a child. They can affect children's and adolescents' perceptions of themselves and others and how they deal with what they feel and experience (e.g., Martin et al., 2011). Still, many children and their families demonstrate instrumental and psychological resilience by building on individual, family, and cultural strengths (Spencer, 2007). However, research suggests that the physiological burden of racism lasts (Chen, Miller, Brody, & Lei, 2015). This can limit opportunities for development and has been associated with stress-related mental and physical illnesses across the lifespan (Center on the Developing Child, 2016).

Racism can be understood ecologically. It affects students directly through the identities they create, stereotype threat, and microaggressions, as well as through the adjustments they make in order to succeed and maintain a sense of dignity (e.g., Stevenson & Stevenson, 2013). Racism affects children and their microsystems —families, schools, and peers—through the types and quality of support and opportunities they receive (IOM & NRC, 2015b). For example, the Civil Rights Data Collection (U.S. Department of Education, Office of Civil Rights, 2014) demonstrates the impacts of structural inequities in education, which include not only disparities in discipline but disparities in opportunities

for learning and enrichment. Racism can be seen at the mesosystem level. An example of how racism affects the education-related aspects of the mesosystem is the problematic interactions between educators and families of color, which include an inability to identify, respect, and leverage family assets (e.g., Harry, Klingner, & Hart, 2005). Racism can be seen at the exosystem level through well-documented disparities in health care, mental health, housing, child welfare, educational resources, work opportunities, opportunities for civic participation, justice, and policing (e.g., Fisher, Busch-Rossnagel, Jopp, & Brown, 2012). Racism is present and institutionalized in macrosystems through policies and cultural forces that sustain or legitimize racial privilege (Pager & Shepherd, 2008).

Institutionalized racism creates contextual factors that enhance the likelihood that children, adolescents, and young adults experience compounded deprivations to development, which include the combination of individual deprivation, identity threat, and emotional stress (e.g., W. E. B. DuBois, 1903; Perkins & Sampson, 2015). Racism acts directly on the child and indirectly through its effects on parents, peers, and teachers (e.g., Caughy, O'Campo, & Muntaner, 2004). Explicit biases, discrimination, and racial microaggressions contribute to deprivation both through denial of opportunity and through stress (Brody et al., 2014; Pager & Shepherd, 2008; Priest et al., 2013). Racism-related stress can be buffered by internal and external assets, such as an intentional focus on the development of a positive sense of racial identity (Berkel et al., 2010; Brody et al., 2014; Sellers, Copeland-Linder, Martin, & Lewis, 2006; Wills et al., 2007). When this does not happen, youth are at risk for negative individual and social identities and school and health-related problems (IOM & NRC, 2015a; Pachter & Coll, 2009; Sampson, Sharkey, & Raudenbush, 2008; Spencer, 2007).

Individual-context relations across development

Child development progresses along a continuum and varies widely between individuals and developmental tasks. At the same time, some brain functions (e.g., executive functions in early childhood) predictably undergo rapid change during certain developmental periods (Davidson, Amso, Anderson, & Diamond, 2006). Similarly, some interactions between the individual and the context occur more prominently at certain points in development, which can trigger more rapid improvements in specific functions. The first three years of life, early childhood, middle childhood, and adolescence each pose their own unique developmental demands and provide opportunities for specific types

of growth. These demands are structured historically, culturally, sociologically, and biologically. For example, adolescence was only "discovered" in the nineteenth century (Demos & Demos, 1969) and has been defined in a variety of ways across cultures and time (Choudhury, 2010). Adolescence is affected, sociologically, by the expansion of social fields the adolescent must navigate, the accompanying increase in disparate expectations, and the demands of new roles (Kellam & Rebok, 1992; Lewin, 1939; Merton, 1957). Adolescence is structured biologically through the complex interactions of genes and environments, which contribute to new opportunities for structural and neural plasticity (Choudhury, 2010; Spenrath, Clarke, & Kutcher, 2011). For example, around puberty, the part of the brain associated with affective, social and emotional functioning experiences a surge that creates changes in social motivation, including a focus on social status and social rewards (Crone & Dahl, 2012). This overly active emotional system can lead to challenges in judgement and problematic decision making (Crosnoe & Johnson, 2011; IOM & NRC, 2015a), which includes risk taking (Galvan et al., 2006; IOM & NRC, 2011; Steinberg, 2008).

The first three years

Infants and toddlers devote their time to forming attachment relationships (including developing trust of others), learning to function autonomously (including developing trust in themselves), and acquiring self-regulatory attributes that allow them to be flexible problem-solvers (Yates, Egeland, & Sroufe, 2003). In the early years, the brain's plasticity is strongest; 700–1,000 new neural connections form every second, and the volume of gray matter increases rapidly (Center on the Developing Child, 2016). This early period of formation and pruning of neural circuits shapes the architecture of the developing brain before the circuits are fully mature and stabilized (e.g., Center on the Developing Child, 2016). Emotional development, including the ability to experience, express, and manage emotions and impulses, begins in this stage, in conjunction with motor control and cognition (e.g., Tarullo, Obradović, & Gunnar, 2009). The early years are also a sensitive period for the development of language and visual systems (Dawson, Ashman, & Carver, 2000).

Parental behavior during the first three years is particularly important. Parental responsiveness, proper nutrition, and early interventions to address cognitive, social, and academic concerns during this period are associated with long-term benefits, while parental depression and maltreatment, social deprivation, and exposure to toxic substances are associated with long-term

challenges (Dawson et al., 2000). Early caregiver relationships are the most proximal and prominent contextual influences on development in these years and can serve to promote optimal brain function and behavior. Attunement and reciprocity is associated with executive function, early language processing skills, vocabulary growth, and other immediate and long-term outcomes (Bindman, Pomerantz, & Roisman, 2015). The first three years are an important time to build resilience within and across settings (e.g., Masten & Cicchetti, 2010), although resilience is a lifelong process that changes across time and contexts.

Early childhood

Neurobiological, emotional, and behavioral foundations in very early childhood set the stage for the development of school readiness skills and for positive developmental outcomes over the life course (e.g., Schweinhart et al., 2005). With proper contextual supports, early childhood marks a period of dramatic increase in executive functions and cognition–emotion integration (e.g., Espinet, Anderson, & Zelazo, 2012). Cognitive, emotional, and behavioral integration at this stage helps children successfully navigate the social demands of preschool. As children begin preschool, they enter into relationships with teachers and peers that can mutually reinforce social behavior (e.g., Hay et al., 2004). The skills necessary to be accepted by peers—emotion regulation, executive functions, social understanding, and prosocial behaviors (such as helpfulness and sharing)—are the same skills that afford children opportunities to form positive relationships with teachers and to learn (e.g., Hay et al., 2004). Early experiences can set off a cascade of relationships, behaviors, self-perceptions, stress responses, and emotions that mutually reinforce each other over time in sometimes adaptive or sometimes maladaptive ways (e.g., Nagaoka et al., 2015).

Aggressiveness, impulsivity, and attentional and affective (e.g., shyness) variability; often associated with chronic stress, can undermine opportunities to connect with others, thereby diminishing opportunities to learn and depreciating the child's and adult's perceptions of the child as a learner. For example, children who exhibit antisocial behavior in preschool participate in fewer classroom activities, and teachers provide them with less instruction and less positive feedback, potentially setting off a cascade of negative self-concept and diminished engagement, learning, and attention that can lead to cycles of poor academic performance and early dropout (Raver & Knitzer, 2002). As a result, affective, social and emotional, and behavioral competence can be more important for early school success than cognitive competence or family background (Raver & Knitzer, 2002), and intentional efforts to promote these skills have been found to be successful (Menting, Orobio de Castro, & Matthys, 2013). An intentional focus on the development of self-regulation, including executive function in young children, can build brain functions involved in many regulation-related skills, including those that support the integration with cognitive skill development and learning overall (Center on the Developing Child, 2016).

Middle childhood

Middle childhood is marked by its own meaningful changes in brain development and social contexts: brain structures and functions, predominantly in the prefrontal cortex (which supports cognitive self-regulation and executive function), undergo rapid growth between ages 7 and 9 (S. B. Johnson et al., 2016). It is a time when children are experiencing increasing independence in new and challenging contexts and changes in the nature of their social interactions. In the United States, the typical key developmental tasks during middle childhood are self-regulation, acquiring skills and knowledge related to learning, and developing interpersonal skills (Nagaoka et al., 2015). These tasks emerge out of the formation and development of friendships, increasing autonomy and behavioral expectations, and increasing academic demands. Developmental constitutive relationships in middle childhood are increasingly characterized by reciprocity and a balance of power as children become self-regulated and caregivers and children increasingly engage in joint reciprocal activities (Li & Julian, 2012). The nature of the developmental relationship with the caregiver changes from proximity to availability (Bosmans & Kerns, 2015). Developmental relationships also expand to other adults, especially teachers. Through these developmental relationships, children increasingly have opportunities to learn and practice critical new skills as teachers expect children to acquire academic skills and to develop contextually appropriate behavioral and attention skills, including empathy, emotional expressiveness, interpersonal negotiation strategies, and cooperation with rules. These competencies, in turn, facilitate relationships with adults and peers, afford increasingly diverse opportunities in the home, school, and other structured settings, and drive academic success (IOM & NRC, 2009). These competencies become more sophisticated as children develop social skills and knowledge through friendships, as well

as social perspective-taking abilities (e.g., Goldstein, Kaczmarek, & English, 2002).

Children who do not develop social, emotional, and cognitive competencies and representations of self as a competent, successful learner are more likely to exhibit poor social skills, such as impulsivity, aggressive behaviors, poor social problem-solving skills, and school disengagement (IOM & NRC, 2009). Fortunately, an increasing body of research indicates that intentional development of habits, skills, and mindsets can help many elementary students develop these competencies (e.g., Jones & Kahn, 2017; Osher et al., 2016).

Middle childhood is a time when mental health disorders and antisocial behaviors begin to emerge with consequences for later outcomes (IOM & NRC, 2009). Middle childhood marks the first symptoms of conduct and anxiety disorders, obsessive compulsive disorder, and depression (IOM & NRC, 2009). Feedback loops between maturational shifts in the child (e.g., social and cognitive abilities) and an expanding social environment that positively reinforces representations of self and others can affect the course of development positively or negatively during this period. This helps explain divergence in developmental trajectories that occur during these years (e.g., Mah & Ford-Jones, 2012). For example, research on the iatrogenic effects of punitive, reactive, and segregating interventions suggests that poor long-term outcomes may in part be a product of developmentally inappropriate adult responses to troubling behavior during these years. (e.g., Petitclerc, Gatti, Vitaro, & Tremblay, 2013).

Adolescence

After early childhood, adolescence is the time of the brain's most dramatic growth spurt, with unique sensitivity to environmental and contextual experiences (Cicchetti, 2016). Adolescence is marked by co-occurring changes in brain development, hormone levels, physical health, and contextual demands and opportunities that have implications for later physical and mental health and behavior. For many, adolescence is a time for risk taking, social reward seeking, and novelty seeking (e.g., Yeager, Fong, Lee, & Espelage, 2015); it is also a time of expanding processing and decision-making skills, opportunity, creativity, exploration, and optimism about one's role in the world (Geisz & Nakashian, 2016).

Intentional skill development is particularly important and effective during adolescence. It is a period in which environments and relationships, particularly those outside the family in the school and community, play a uniquely important role in integration and development. One of the greatest misconceptions of this period is that adolescents do not need adults; adolescents crave relationship and connection to both peers and adults. For example, perceptions of maternal warmth continue to be important for academic achievement and well-being in adolescence (Luthar et al., 2015; Suizzo et al., 2012; Walton & Flouri, 2010).

Adolescence is a highly sensitive period for the development of regions of the brain involved in social cognition and self-awareness (e.g., Nagaoka et al., 2015). The frontal lobe, which governs cognitive control, continues to mature and is still developing in adolescence and early adulthood. A remodeling of the brain's dopaminergic system occurs around the time of puberty, in which amounts of dopamine fall sharply from levels in the early developmental phases (e.g., Sisk & Zehr, 2005). The dopaminergic system overlaps and interacts with the brain's social networks and the networks for processing affective and motivational stimuli (Nelson, Leibenluft, McClure, & Pine, 2005).

One way of viewing the adolescent period of brain remodeling is through the lens of neural integration, which may modulate the predisposition to reward seeking and risk taking, particularly in later adolescence. Research suggests that the brain has two fundamental processes: one of pruning in early adolescence, the other of myelin formation in middle to late adolescence (e.g., Sherman et al., 2014). Pruning enables regions of the brain to become more differentiated; myelin enables these remaining regions to become more linked and integrated. This adolescent brain remodeling and integration is thought to contribute to higher capacities for regulation and other higher order cortical functions (Stevens, Skudlarski, Pearlson, & Calhoun, 2009). Integration and increased connectivity of cortical structures allow for more functional specialization leading toward capacities for better judgment and decision making, for greater conceptual and creative thinking, and for exploration of new situations and challenges in ways not previously demonstrated (Siegel, 2013). Positive youth development strategies and a web of appropriate adult support can greatly enhance an adolescent's ability to optimize this period and realize the positive potential it contains (e.g., Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Lerner, Bowers, Geldhof, Gestsdóttir, & DeSouza, 2012; C. Smith, McGovern, Larson, Hillaker, & Peck, 2016; Varga & Zaff, 2017).

The practice of mindfulness can be particularly useful in enhancing neural integration in the adolescent brain (Siegel, 2013). Studies of mindfulness training among young adults support the benefits of mindfulness as one strategy for promoting increases in neural

integration. These studies have found that mindfulness training is correlated with increased interconnectivity of the connectome and growth of the corpus callosum, the hippocampus, and the prefrontal region (Cole, 2014).

The onset of serious psychiatric disorders is one of the risks in the adolescent period (V. A. Johnson, Kemp, Heard, Lennings, & Hickie, 2015). One cause of this is the pruning process, which occurs during this period and may reveal underlying vulnerabilities in neural connectivity leading to the manifestation of psychiatric disorders. Excessive pruning, which can result from chronic unbuffered stress and the resulting higher cortisol levels, can also lead to new vulnerabilities to stress which leads to greater neurotoxicity (Siegel, 2013). In addition, there are significant shifts in the dopaminergic reward system, which may be at play in the risk of developing addictive problems and other risk-taking behaviors during this period (Ross & Peselow, 2009).

Reciprocal interactions between contextual changes (e.g., new social fields) and expectations (e.g., increased performance demands), on the one hand, and brain and hormonal changes, on the other, move many children from the dependencies of childhood to the emerging identities and responsibilities of adulthood. These reciprocal interactions allow many adolescents to apply emerging metacognitve skills to more intentionally contribute to adaptive regulation with their context, such as selecting positive goals, using greater intentionality in taking on challenges, developing cognitive and behavioral skills to optimize the potential in opportunities, and compensating for challenges and failures (e.g., Gestsdottir & Lerner, 2008). Many of the tasks of adolescence are about the balance between fine-tuning critical self-regulatory skills, sense of purpose, and belonging (prefrontal cortex) versus managing the overwhelming emotions that drive risk-taking and impulsive behavior (amygdala). Although early adolescence (ages 12–13) is often described as a time of emotional volatility and a preference for short-term rewards (Steinberg, 2008), middle and late adolescence are times of increasingly goal-oriented learning, identity formation, autonomy assertion, and a growing sense of values (e.g., Nagaoka et al., 2015).

Providing enriching opportunities supports adolescents' "emotional spark, intense social engagement, novelty seeking, and drive toward creative exploration" (Siegel, 2013, p. 7) in schools and other contexts in which adolescents spend their time helps them unlock the hidden potential of the adolescent brain leading to increased independence and self-awareness (Scales, Benson, & Roehlkepartain, 2011; Siegel, 2013). All adolescents need positive and sustained relationships with competent and caring adults inside and outside the home who can provide exposure to life skill-building activities and who are prepared to respond positively to developmental changes in youth: opportunities to make their own decisions; opportunities to build social networks; opportunities to actively participate and take leadership in family, school, and community activities; access to safe, intellectually challenging environments; and guidance through clear standards for behavior and norms (e.g., Eccles & Roeser, 2011; Geisz & Nakashian, 2016).

Unfortunately, developmental contexts such as homes and schools do not always have the support or structures to accommodate the developmental needs of adolescents. For example, adolescents may encounter a greater number and complexity of adversities compared to younger children (Grasso, Dierkhising, Branson, Ford, & Lee, 2016), and maternal distress can be highest during the middle school years, as mothers adjust to the many brain and hormonal changes that occur during adolescence and adjustments in the nature of the developmental relationship (Luthar & Ciciolla, 2016). Middle and high schools often are organized in ways that do not fit the developmental tasks or needs of adolescents, often de-emphasizing opportunities for ongoing, deep connections to adults and peers, healthy social networks, and opportunities to practice autonomous decision-making and higher-level cognitive strategies, while emphasizing competition and social comparison (Eccles & Roeser, 2011). Although adolescents need and want more autonomy and connectedness, schools and classrooms at the middle and high school levels are not often designed to support relationships and community. In fact, the opposite is true. Students often experience a loss of autonomy, as rules become harsher and connections to adults—who work with more students—become more difficult to maintain.

Intergenerational transmission of adversity and assets

Development is an integrative, progressive process. The experience of developmental support or, alternatively, adversity can have cumulative effects that can produce intra- as well as intergenerational assets and risks. Intentional influences on context represent opportunities to alter developmental sequencing, pathways, and range. Longitudinal studies of the long-term benefits of particular interventions on some children (Catalano, Hill, Haggerty, Fleming, & Hawkins, 2010; Chetty et al., 2011; Kellam et al., 2008; Schweinhart et al., 2005), and research on school and neighborhood

effects, suggest how these impacts can be amplified or attenuated (Crosnoe & Benner, 2015; Leventhal, Dupéré, & Shuey, 2015; Osher & Kendziora, 2010). Longitudinal studies of the costs and benefits of interventions are powerful because effects (and related costs and/or benefits) are compounded and intergenerational. The effects are profound in importance to the overall health and wellness of our children and our society.

The intergenerational transmission of both adaptive and maladaptive systems is rooted in relational bioecological processes, which can be affected by improving the *net risk vulnerability ratio* (Spencer, 1995) for all children by minimizing risk vulnerability and addressing the macro- and microsystem factors that support or undermine healthy development for any group of children (Shonkoff, 2012, 2016; Shonkoff, Richter, van der Gaag, & Bhutta, 2012).

Children (and adults) adapt to hostile environments in ways that can undermine learning and support their involvement in unhealthy or high-risk behaviors (Crick & Dodge, 1994; Martin et al., 2011). However, the principles developed in the companion article on malleability and plasticity suggest the power of developmentally constructive environments to promote resilience as well as positive developmental and learning outcomes (e.g., Masten & Coatsworth, 1998). Relationships in the context of well-designed family, ECE, neighborhood, and school settings and interventions are potential proximal mediators of positive outcomes. Relationships can also be contributors both to chronic stress and the consequences of stress, thereby establishing pathways toward the intergenerational transmission of assets or adversity.

The prenatal period and the first two years of life provide a useful example (e.g., Hochberg et al., 2011). During this early period, the neurons in the brain that build the foundation for synaptic connections are still developing (e.g., Halfon, Shulman, & Hochstein, 2001). These processes are related to changes in maternal brain structure and function, including elevated stress hormones and oxytocin levels (e.g., Kim, Strathearn, & Swain, 2016). These changes, in turn, influence the development of the fetus and the attachment relationship in infancy (Center on the Developing Child, 2016; Kim et al., 2016), which is dependent on sensitive responsiveness to the child's signals (e.g., Feldman, 2015). The biological and the contextual come together within the mother's body to establish healthy or unhealthy developmental processes. In the first year of life, the physical and behavioral interactions between caregiver and infant trigger a process of bio-behavioral synchrony (i.e., sensitivity to each other) that involves the release of oxytocin and physical contact. This process builds a child's capacity for social development and mediates socialization, stress management, emotion regulation, and well-being, which have short- and long-term implications for social, emotional, and behavioral competency and readiness for learning in the early childhood period. (Feldman, 2015; Hochberg et al., 2011).

Disruptions can be linked to children's social psychopathologies, including autism, social anxiety, depression, and schizophrenia (Feldman, 2015). Disruptions can also be linked to environmental factors. Some children exposed to trauma and adversities, such as parental mental illness, alcohol abuse, physical or emotional neglect, or violence, show cognitive impairments, attention problems, language deficits, academic difficulties, withdrawn behavior, externalizing problems, mental health problems, and difficulty with interpersonal relationships (Center on the Developing Child, 2016). As children grow, exposure to trauma and to adversity in the home and in other settings continues to affect biology and behavior. Children who experience trauma and adversity show biomarker brain structure and activation differences that increase their vulnerability to high-risk behaviors (e.g., being a perpetrator or victim of violence, suicide, drug addiction) later in life (e.g., Park & Schepp, 2015).

The physical and behavioral consequences of adversity and trauma will continue to manifest in the interactions between caregivers and children in early care settings and across multiple social fields over the life course absent counteracting influences that takes advantage of children's malleability. Children's brains are malleable (e.g., Blair & Raver, 2016), and can be supported through innovative social policy, developmentally constructed settings, and culturally responsive family-driven practice (Hoagwood, 2005; Osher et al., 2011). Although past and current maternal experiences can set the stage for coercive interactions between young children and their parents (Sitnick et al., 2015; J. D. Smith et al., 2014), longitudinal experimental studies of interventions such as the Nurse Home Partnership program demonstrate effectiveness in reducing a number of risk factors including maternal and child abuse (Eckenrode et al., 2010; Olds et al., 2004). Well-implemented family-driven interventions are important because caregiver adversity and stress can disrupt bio-social synchrony and attunement impacting the development of the emotional response system of the brain and lowering the caregiver's sensitivity to the child's social cues (Conger, Conger, & Martin, 2010; Kim & Watamura, 2015). The presence of well-designed ECE settings and interventions are an example of a set of contextual factors that have the

possibility of making developmentally important alterations to unhealthy pathways and establish the foundational behaviors, social skills and foundational cognitive skills that can be promoted and developed in this early period (e.g., S. B. Johnson et al., 2016; Nix et al., 2016).

Neighborhoods and schools contribute to the intergenerational transmission of adversity and assets. Whereas neighborhood advantage is often associated with higher school quality and high quality social services (Twine & Gardener, 2013), neighborhood disadvantage is associated with poorer school quality, as well as the build-up of biological "wear and tear" (i.e., allostatic load) over the life course, especially in men (e.g., Gustafsson et al., 2014). Schools create as well as amplify risk (Osher, Kendziora, Spier, & Garibaldi, 2014). For example, stress and lack of pre- and post-natal family care and support can contribute to early dysregulation in emotions, cognition, and behavior at school entry, which, in turn, can stimulate unsupportive interactions with teachers who are not trained and supported to address this dysregulation. These unsupportive interactions contribute to behavior problems that reinforce negative beliefs about belonging and intelligence and questions about the purpose of school itself (e.g., Blair & Diamond, 2008). Absent a developmentally constructive setting in which the norms for healthy development and learning are embedded, felt, experienced and practiced by children and all members of the school staff, reactive teacher responses to troubling behavior can set a negative cascade of activities in motion. Examples of this negative cascade include exclusionary discipline and a focus on behavioral control, student disconnection and disengagement, grade repetition, dropping out, incarceration, substance abuse, mental disorder (e.g., Conduct Problems Prevention Research Group, 2015; Kellam et al., 2008), dropout (Lansford, Dodge, Pettit, & Bates, 2016), early pregnancy (Wagner, 1995; Yampolskaya, Brown, & Greenbaum, 2002), and long-term physical health problems (e.g., diabetes, lung cancer). Moreover, these children become parents themselves, which moves risk factors into the next generation (e.g., Chandler, 2006; Lansford et al., 2016).

Educational attainment provides an example of a potential inflection point in the cycle of intergenerational transmission. Cultural capital and family assets, along with social capital and neighborhood effects, contribute to the intergenerational transmission of educational attainment. This intergenerational transmission is much greater in the United States than in Scandinavian countries, which have less inequality and many more social services that support families, children, and access to higher education (Huang, 2013).

There are many drivers of inequality in education. An illustrative one is the disproportionate use of exclusionary and harsh discipline in schools. It starts in ECE settings and continues until youth leave school. Exclusionary discipline disproportionately affects Black students, particularly black male students. Suspension and expulsion affects short and long-term outcomes for Black males. These harmful outcomes include beliefs about themselves, increased disengagement from school, suspension-driven chronic absenteeism, dropping out, increased likelihood of fathering a child in adolescence, diminished likelihood of postsecondary school attainment and employment, increased likelihood of arrest, and diminished ability to support a family emotionally and financially (e.g., Osher, Woodruff, & Sims, 2002; Skiba et al., 2011). These factors, in turn, affect generations to come (e.g., Foster & Hagan, 2015).

These two examples drawn from ECE settings and schools serve as two powerful examples of the ways in which two developmental settings offer a 10–12 year period in which positive whole child development can be nurtured, pathways of greater risk averted, and adults supported, all in the service of promoting the internal assets of all children. Risk, protection, and assets are social constructs (e.g., Kendziora & Osher, 2004; Whelan & Maître, 2008). We can build developmentally rich settings, or not. If we do, then macrosystem factors will interact with microsystem factors to contribute to the intergenerational transmission of advantage for many more children. When not addressed and, in the presence of great inequality, education and health disparities, housing segregation, economic disadvantage, and the lack of sufficient support for families can contribute to adult and child outcomes that put both to risk; and continues the cycle.

Preventing the negative impacts of adversity on children as well as on the adults who care for them can prevent the intergenerational transmission to future generations of children and families of adversity and its many risks to development (Reiss, 2013). Conversely, building individual assets, such as affective, cognitive, social, emotional, and metacognitive competencies, and environmental assets–such as family and neighborhood social capital, can expand opportunities and contribute to the intergenerational transmission of adaptive systems (Martin et al., 2010; Schofield et al., 2011). Although the societal cost and benefit are enormous, realizing the full benefit requires intervention at the level of family, society, and policy, including culturally competent and family-driven approaches (e.g., S. B. Johnson, Riley,

Granger, & Riis, 2013). Evidence suggests that well-designed developmental contexts that employ the right intervention and prevention strategies for each child can provide the level of support, enrichment, and stimulation needed to buffer the effects of trauma and other ecological challenges on adults and children (e.g., Jones & Kahn, 2017; Sawhill & Karpilow, 2014).

In our companion article, we state that the lifecycle of an individual is not prefigured in a genetic program, that positive development emerges from an ongoing collaboration between biology, nurture and the environment, and that epigenetics are particularly important. The epigenetic landscape (Waddington, 1956, 1957), which includes more than cellular epigenetic inheritance processes, can be expanded (Griffiths & Hochman, 2015). Individuals inherit non-molecular features (in addition to their "cellular epigenetic inheritance") that include parental and cultural characteristics, learnings from the social environment, and the benefits of a developmentally enriched academic environment (Griffiths & Hochman, 2015; Meaney & Szyf, 2005; Richerson & Boyd, 2005).

Assets can also be developed and passed on over the lifecycle of an individual to influence future generations. As Hochberg and colleagues (2011) observed, "Each living organism has two histories that determine its biology: an evolutionary history whose duration is in the hundreds of thousands of years, and a developmental history that starts at the time of its conception" (p. 159). Absent the social construction that promotes the positive development of individual children, privilege and the uneven allocation of assets will dominate the futures of many children, with continued disparities in educational access, economic attainment, and the health, and wellbeing of our society. This need not be the case, and the convergence of research summarized in these two articles suggests a way forward.

Conclusions

Children's growth is characterized by complex, dynamic transactions between nature and nurture; interpretations and internalizations of these transactions; and the variations of these transactions across time, place, and individuals. Throughout this entire process, genes are chemical "followers"—their expression at the biological level is determined by contextual influences and developmental malleability and plasticity. Human development is not predetermined, fixed, or linear; it is not prefigured in a genetic program. Rather, it is unique to each and every individual, highly responsive to environments, cultures, and relationships, continuously adapting, organizing, and reorganizing, and subject to change across the lifespan.

These findings reflect convergence of evidence across multiple disciplines and lines of inquiry regarding the leading role of context and relationships; their location and coaction within nested bioecological systems; the significance of adversity and resilience; the importance of malleability and plasticity; the joint determination of complex skills through the coaction and co-influence of multiple developmental resources; the constructive and progressive nature of development, its unique pacing, nonlinear pathways and range; and the importance of culture, intersubjective experience, meaning making, and human agency.

This convergence of research across many scientific and educational disciplines reflects a potential to further align and build upon existing knowledge and to build new knowledge about how children learn and develop in context. This knowledge can be further illuminated and integrated within a DST framework. DST is not new, nor does it supplant the rich field-specific bodies of work presented here. DST helps align these field-specific bodies of knowledge within the integrated nature of development itself, depicting how these processes become engaged in the production of an individual child's life. It does so by focusing on the dynamic integration of multiple systems both within and external to the individual and the immediate environments and reducing the possibility of presenting developmental processes in dichotomous terms. DST provides a framework for aligning and combining research on individual and contextual systems, from the biological and physiological with attention to human agency and cultural, phenomenological, sociological, and historical factors (e.g., Spencer, 2007), and addresses our increasing knowledge that shows that social, emotional, cognitive, linguistic, and academic development "are deeply intertwined" (Jones & Kahn, 2017, p. 4). As summarized by Fischer and Bidell (2006), "There is no separation of nature and nurture, biology and environment, or brain and behavior but only a collaborative coordination between them" (p. 383).

This knowledge about the individual's responsiveness to context and experience has both positive and negative implications. The ability of contextual influences to encourage adaptive epigenetic signatures and to buffer factors that contribute to maladaptive epigenetic signatures provides a powerful lever to unleash children's genetic potential. As in the case of the social determinants of health (Commission on Social Determinants of Health, 2008; Gornick, 2002; National Partnership for Action to End Health Disparities, 2011; U.S. Department of Health and Human Services, 2010, 2015, n.d.), knowledge exists to identify the educational and social determinants of development and learning, and these must be addressed in our practices and

policies. The future of our education and child-serving systems should be built upon what we now know about the development of the brain and the power of context, including the supports provided to adults, to construct that development. It is important to apply this - knowledge to the intentional design of the environmental contexts in which children grow, learn, and develop. Skills are context-specific, self-organizing, and culturally defined. The context specificity of skill development can be used to positively affect the development of children if the context is designed or "personalized" to: integrate whole-child developmental processes (affective, cognitive, social and emotional, motivational, and metacognitive); promote the growth of new, more complex skills and domain specific knowledge; provide culturally responsive support consonant with children's experience, prior knowledge and background; and support the adults in children's lives.

Dramatic improvements in outcomes and equity depend on public and political will, sound policy in service to whole-child practices based on rigorous science, implemented with quality (Wandersman, Alia, Cook, Hsu, & Ramaswamy, 2016), measured with an understanding of formative progression of individual development (Fischer & Kennedy, 1997; Rose, Rouhani, & Fischer, 2013); and adopted at scale (Dymnicki, Wandersman, Osher & Pakstis, 2016), with cultural competence and equitable outcomes as explicit goals. We already know enough to act: we can cease doing things that hurt children (e.g., exclusionary discipline) and start doing things that help children (e.g., providing access to high-quality child care to all children). However, a cornerstone of this effort must include a robust translational research and development agenda that supports synthesis and integration and application of current scientific knowledge within and across disciplines while addressing important gaps in knowledge, practice, methods, and measures.

Both the education and child-serving systems were designed with too little attention to the foundational knowledge summarized in this and the companion article regarding the powerful role of context in development (e.g., Cremin, 1980; Tyack, 1974). This knowledge suggests provocative opportunities for defining and studying an increasingly intentional constructive enterprise between children, the ecologies in which they grow and learn, and the relationships to the adults and peers in their lives and, by doing so, open pathways for new creative approaches to solving seemingly intractable learning and social problems. This knowledge, when understood, translated, and applied with an appreciation for the power of human agency and culture, can support positive adaptation, resilience, learning, health, and well-being, in short, the potential for all children to thrive. To ensure that approaches to whole-child development are scaled successfully, we must develop a comprehensive set of strategies to drive demand for change in the design of our existing practices and policies, the adoption of successful tools, methods, and measures to support effective implementation across diverse contexts, and the establishment of a supportive policy environment.

This article and its companion article, "Malleability, Plasticity, and Individuality: How Children Learn and Develop in Context," are part of a trilogy of articles that have synthesized diverse scientific fields on human development in context. Whereas the first two examine the diverse scientific fields that compose human development and the ecologies and contexts in which children grow, learn, and develop, a third companion article takes the content in the first two articles and describes specifically what this could mean for practice in our educations systems. Subsequent articles will apply these findings to professional development and to other child serving settings.

Funding

Author's note

ORCID

Juliette Berg 🔍 http://orcid.org/0000-0001-8150-5999
Lily Steyer 🔍 http://orcid.org/0000-0002-5823-4681

References

Abar, C. C., Jackson, K. M., & Wood, M. (2014). Reciprocal relations between perceived parental knowledge and adolescent substance use and delinquency: The moderating role of parent-teen relationship quality. *Developmental Psychology*, *50*(9), 2176–2187. doi:10.1037/a0037463

Adams, R. E., Santo, J. B., & Bukowski, W. M. (2011). The presence of a best friend buffers the effects of negative experiences. *Developmental Psychology*, *47*(6), 1786–1791. doi:10.1037/a0025401

Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, *46*, 331–341. Retrieved from http://www.psychology.sunysb.edu/attachment/online/ainsworth_bowlby_1991.pdf

Arcia, E. (2006). Achievement and enrollment status of suspended students: Outcomes in a large, multicultural school district. *Education and Urban Society*, *38*(3), 359–369. doi:10.1177/0013124506286947

Baird, K., & Kracen, A. C. (2006). Vicarious traumatization and secondary traumatic stress: A research synthesis. *Counselling Psychology Quarterly*, *2*, 181–188. doi:10.1080/09515070600811899

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments and fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/7777651

Beltz, A. M., Wright, A. G. C., Sprague, B. N., & Molenaar, P. C. M. (2016). Bridging the nomothetic and idiographic approaches to the analysis of clinical data. *Assessment*, *23*(4), 447–458. doi:10.1177/1073191116648209

Berg, J., Osher, D., Cantor, P., Steyer, L., & Rose, T. (2016). *The science of learning and development: A synthesis*. Washington, DC: American Institutes for Research, Turnaround for Children, The Opportunity Institute, The Learning Policy Institute, and EducationCounsel.

Bergin, C., & Bergin, D. (2009). Attachment in the classroom. *Education Psychology Review*, *21*, 141–170. doi:10.1007/s10648-009-9104-0

Berkel, C., Knight, G. P., Zeiders, K. H., Tein, J. Y., Roosa, M. W., Gonzales, N. A., & Saenz, D. (2010). Discrimination and adjustment for Mexican American adolescents: A prospective examination of the benefits of culturally related values. *Journal of Research on Adolescence*, *20*(4), 893–915. doi:10.1111/j.1532-7795.2010.00668.x

Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2016). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Review of Educational Research*, *87*(2), 425–469. doi:10.3102/0034654316669821

Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: Mediating mechanisms and implications for prevention. *Child Development*, *82*(1), 162–176. doi:10.1111/j.1467-8624.2010.01547.x

Berry, D., Blair, C., Ursache, A., Willoughby, M., Garrett-Peters, P., Vernon-Feagans, L., … Granger, D. A. (2014). Child care and cortisol across early childhood: Context matters. *Developmental Psychology*, *50*(2), 514–525. doi:10.1037/a0033379

Beveridge, R. M., & Berg, C. A. (2007). Parent-adolescent collaboration: An interpersonal model for understanding optimal interactions. *Clinical Child and Family Psychological Review*, *10*(1), 25–52. doi:10.1007/s10567-006-0015-z

Bindman, S. W., Pomerantz, E. M., & Roisman, G. I. (2015). Do children's executive functions account for associations between early autonomy-supportive parenting and achievement through high school? *Journal of Educational Psychology*, *107*(3), 756–770. doi:10.1037/edu0000017

Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development & Psychopathology*, *20*(3), 899–911. doi:10.1017/S0954579408000436

Blair, C., & Raver, C. C. (2014). Closing the achievement gap through modification of neurocognitive and neuroendocrine function: Results from a cluster randomized controlled trial of an innovative approach to the education of children in kindergarten. *PLoS One*, *9*(11), e112393. doi:10.1371/journal.pone.0112393

Blair, C., & Raver, C. C. (2016). Poverty, stress, and brain development: New directions for prevention and intervention. *Academic Pediatrics*, *16*(3, Suppl.), S30–S36. doi:10.1016/j.acap.2016.01.010

Blakemore, S.-J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annual Review of Psychology*, *65*(1), 187–207. doi:10.1146/annurev-psych-010213-115202

Bornstein, M. H. (2015). Children's parents. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 55–132). Hoboken, NJ: Wiley.

Bornstein, M. H. (2017). The specificity principle in acculturation science. *Perspectives on Psychological Science*, *12*(1), 3–45. doi:10.1177/1745691616655997

Bornstein, M. H., & Leventhal, T. (2015). Children in bioecological landscapes of development. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 1–5). Hoboken, NJ: Wiley.

Bosmans, G., & Kerns, K. A. (2015). Attachment in middle childhood: Progress and prospects. *New Directions for Child and Adolescent Development*, *2015*(148), 1–14. doi:10.1002/cad.20100

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York, NY: Basic Books.

Boykin, A. W. (1986). The triple quandary and the schooling of Afro-American children. In Neisser U. (Ed.), *The school achievement of minority children* (pp 57–92). Hillsdale, NJ, Erlbaum.

Boykin, A. W. (2000). The talent development model of schooling: Placing students at promise for academic success. *Journal of Education for Students Placed at Risk (JESPAR)*, *5*(1–2), 3–25.

Brody, G. H., Lei, M.-K., Chae, D. H., Yu, T., Kogan, S. M., & Beach, S. R. H. (2014). Perceived discrimination among African American adolescents and allostatic load: A

longitudinal analysis with buffering effects. *Child Development*, *85*(3), 989–1002. doi:10.1111/cdev.12213

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1994). *Ecological models of human development* (2nd ed., Vol. 3). Oxford, England: Elsevier Science.

Bronfenbrenner, U. (2005). *Making human beings human*. Thousand Oaks, CA: SAGE.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 1. Theory and method* (7th ed., pp. 793–828). Hoboken, NJ: Wiley.

Bryk, A. S., & Schneider, B. (2003). Trust in schools: A core resource for school reform. *Educational Leadership*, *60*(6), 40–45. Retrieved from http://www.ascd.org/publications/educational-leadership/mar03/vol60/num06/Trust-in-Schools@-A-Core-Resource-for-School-Reform.aspx

Cairns, R. B. (1979). *Social development: The origins and plasticity of interchanges*. San Francisco, CA: W. H. Freeman.

Cassidy, J., Jones, J. D., & Shaver, P. R. (2013). Contributions of attachment theory and research: A framework for future research, translation, and policy. *Development and Psychopathology*, *25*(4, Pt. 2), 1415–1434. doi:10.1017/S0954579413000692

Cassidy, J., & Shaver, P. R. (2008). *Handbook of attachment* (2nd ed.). New York, NY: Guilford Press.

Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2002). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Prevention & Treatment*, *5*(1), 15a.

Catalano, R. F., Hill, K. G., Haggerty, K. P., Fleming, C. B., & Hawkins, J. D. (2010). Social development interventions have extensive, long-lasting effects. In A. E. Fortune, P. McCallion, & K. Briar-Lawson (Eds.), *Social work practice research for the twenty-first century* (pp. 72–80). New York, NY: Columbia University Press.

Caughy, M. O., O'Campo, P. J., & Muntaner, C. (2004). Experiences of racism among African American parents and the mental health of their preschool-aged children. *American Journal of Public Health*, *94*(12), 2118–2124.

Center on the Developing Child. (2016). *From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families*. Cambridge, MA: Harvard University, Center on the Developing Child. Retrieved from https://developingchild.harvard.edu/resources/from-best-practices-to-breakthrough-impacts/

Chandler, A. (2006). *A life course framework for improving the lives of boys and men of color* [PowerPoint]. Retrieved from http://www.gih.org/files/AudioConf/Building%20a%20Movement%20(Abbreviated).pdf

Chen, E., Miller, G. E., Brody, G. H., & Lei, M. (2015). Neighborhood poverty, college attendance, and diverging profiles of substance use and allostatic load in rural African American youth. *Clinical Psychological Science*, *3*(5), 675–685. doi:10.1177/2167702614546639

Chetty, R., Friedman, J. N., Hilger, N., Saez, E., Schanzenbach, D. W., & Yagan, D. (2011). How does your kindergarten classroom affect your earnings? Evidence from Project Star. *The Quarterly Journal of Economics*, *126*(4), 1593–1660. doi:10.1093/qje/qjr041

Choudhury, S. (2010). Culturing the adolescent brain: What can neuroscience learn from anthropology? *Social Cognitive and Affective Neuroscience*, *5*(2–3), 159–167. doi:10.1093/scan/nsp030

Cicchetti, D. (2016). *Developmental psychopathology: Vol. 4. Risk, resilience, and intervention*. Hoboken, NJ: Wiley.

Coie, J. D., Terry, R., Lenox, K., Lochman, J., & Hyman, C. (1995). Childhood peer rejection and aggression as predictors of stable patterns of adolescent disorder. *Development and Psychopathology*, *7*, 697–713. doi:10.1017/S0954579400006799

Cole, S. W. (2014). Human social genomics. *PLoS Genetics*, *10*(8), e1004601. doi:10.1371/journal.pgen.1004601

Coley, R. L., Sims, J., Dearing, E., & Spielvogel, B. (2017). Locating economic risks for adolescent mental and behavioral health: Poverty and affluence in families, neighborhoods, and schools. *Child Development*. Advance online publication. doi:10.1111/cdev.12771

Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health*. Geneva, Switzerland: World Health Organization. Retrieved from http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703_eng.pdf

Conduct Problems Prevention Research Group. (2015). Impact of early intervention on psychopathology, crime, and well-being at age 25. *The American Journal of Psychiatry*, *172*(1), 59–70. doi:10.1176/appi.ajp.2014.13060786

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and the Family*, *72*(3), 685–704. doi:10.1111/j.1741-3737.2010.00725.x

Cremin, L. (1980). *American education: The national experience*. New York, NY: Harper and Row.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin*, *115*(1), 74–101.

Crone, E. A., & Dahl, R. E. (2012). Understanding adolescence as a period of social–affective engagement and goal flexibility. *Nature Reviews Neuroscience*, *13*(9), 636–650. doi:10.1038/nrn3313

Crosnoe, R., & Benner, A. D. (2015). Children at school. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 268–304). Hoboken, NJ: Wiley.

Crosnoe, R., & Johnson, M. K. (2011). Research on adolescence in the twenty-first century. *Annual Review of Sociology*, *37*, 439–460.

Cutler, D. M., & Glaeser, E. L. (1997). Are ghettos good or bad? *Quarterly Journal of Economics*, *112*(3), 827–872. Retrieved from http://www.jstor.org/stable/2951257

Davidson, M. C., Amso, D., Anderson, L. C., & Diamond, A. (2006). Development of cognitive control and executive functions from 4 to 13 years: Evidence from manipulations of memory, inhibition, and task switching. *Neuropsychologia*, *44*(11), 2037–2078. doi:10.1016/j.neuropsychologia.2006.02.006

Dawson, G., Ashman, S. B., & Carver, L. J. (2000). The role of early experience in shaping behavioral and brain development and its implications for social policy. *Developmental Psychopathology*, 12(4), 695–712.

De Castro, B. O., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. J. (2002). Hostile attribution of intent and aggressive behavior: A meta-analysis. *Child Development*, 73(3), 916–934.

Demos, J., & Demos, V. (1969). Adolescence in historical perspective. *Journal of Marriage and the Family*, 31(4), 632–638.

Diette, T. M., & Ribar, D. C. (2015). *A longitudinal analysis of violence and housing insecurity* (SSRN Scholarly Paper No. ID 2678794). Rochester, NY: Social Science Research Network. Retrieved from https://papers.ssrn.com/abstract=2678794.

DiMaggio, P., & Garip, F. (2012). Network effects and social inequality. *Annual Review of Sociology*, 38(1), 93–118. doi:10.1146/annurev.soc.012809.102545

Dishion, T. J., McCord, J., & Poulin, F. (1999). When interventions harm: Peer groups and problem behavior. *American Psychologist*, 54, 755–764.

Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology*, 62, 189–214.

Donoghue, E. A. (2017). Quality early education and child care from birth to kindergarten. *Pediatrics*, 140(2), e20171488. doi:10.1542/peds.2017-1488

Doyle, W. (2006). Ecological approaches to classroom management. In C. M. Evertson, & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 97–125). Mahwah, NJ: Erlbaum.

DuBois, D. L., Portillo, N., Rhodes, J. E., Silverthorn, N., & Valentine, J. C. (2011). How effective are mentoring programs for youth? A systematic assessment of the evidence. *Psychological Science in the Public Interest*, 12(2), 57–91. doi:10.1177/1529100611414806

DuBois, W. E. B. (1903). *The souls of black folk*. New York, NY: New American Library.

Duckworth, A. L., Kim, B., & Tsukayama, E. (2013). Life stress impairs self-control in early adolescence. *Frontiers in Psychology*, 11(3), 608. doi:10.3389/fpsyg.2012.00608

Duncan, G. J., Magnuson, K., & Murnane, R. J. (2016). Reforming preschools and schools. *Academic Pediatrics*, 16(3), S121–S127. doi:10.1016/j.acap.2015.12.003

Dupree, D., Spencer, T. R., & Spencer, M. B. (2015). Stigma, stereotypes and resilience identities: The relationship between identity processes and resilience processes among Black American adolescents. In L. C. Theron, L. Liebenberg, & M. Ungar (Eds.), *Youth resilience and culture: Commonalities and complexities* (pp. 117–129). Dordrecht, The Netherlands: Springer. Retrieved from http://link.springer.com/chapter/10.1007/978–94-017-9415-2_9.

Dymnicki, A., Wandersman, A., Osher, D., & Pakstis, A. (2016). Bringing interventions to scale. In M. A. Bond, I. Serrano-Garcia, & C. Keys (Eds.), *Handbook of community psychology*. Washington, DC: American Psychological Association.

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence*, 21(1), 225–241.

Eckenrode, J., Campa, M., Luckey, D. W., Henderson, C. R., Cole, R., Kitzman, H., … Olds, D. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics & Adolescent Medicine*, 164(1), 9–15.

Eddy, J. M., Cearley, J., Bergen, J., & Stern-Carusone, J. (2014). Children of incarcerated parents. In D. L. DuBois & M. J. Karcher (Eds.), *Handbook of youth mentoring* (pp. 369–382). Thousand Oaks, CA: Sage.

Espelage, D. L., & De La Rue, L. (2011). Getting serious about community-based approaches to youth violence prevention. *Educational Psychology*, 5(1), 3–5.

Espinet, S. D., Anderson, J. E., & Zelazo, P. D. (2012). N2 amplitude as a neural marker of executive function in young children: An ERP study of children who switch versus perseverate on the Dimensional Change Card Sort. *Developmental Cognitive Neuroscience*, 15(2, Suppl. 1), S49–S58. doi:10.1016/j.dcn.2011.12.002

Everston, C., & Weinstein, C., (Eds.). (2006). *Handbook of classroom management: Research, practice, and contemporary issues*. Mahwah, NJ: Erlbaum.

Farmer, T. W., Dawes, M., Alexander, Q., & Brooks, D. S. (2016). Challenges associated with applications and interventions: Correlated constraints, shadows of synchrony, and teacher/institutional factors that impact social change. In K. R. Wentzel, & G. B. Ramani (Eds.), *Handbook of social influences in school contexts: Social-emotional, motivation, and cognitive outcomes* (pp. 423–435). New York, NY: Routledge.

Farmer, T. W., Lines, M. M., & Hamm, J. V. (2011). Revealing the invisible hand: The role of teachers in children's peer experiences. *Journal of Applied Developmental Psychology*, 32(5), 247–256. doi:10.1016/j.appdev.2011.04.006

Feldman, R. (2015). The adaptive human parental brain: Implications for children's social development. *Trends in Neurosciences*, 38(6), 387–399. doi:10.1016/j.tins.2015.04.004

Fischer, K. W., & Bidell, T. R. (2006). Dynamic development of action, thought, and emotion. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 1. Theory and method* (6th ed., pp. 313–399). Hoboken, NJ: Wiley.

Fischer, K. W., & Kennedy, B. (1997). Tools for analyzing the many shapes of development: The case of self-in-relationships in Korea. In E. Amsel, & K. A. Renninger (Eds.), *Change and development: Issues of theory, method, and application* (pp. 117–152). Mahwah, NJ: Erlbaum.

Fischer, K. W., & Rose, L. T. (2001). Webs of skills: How students learn. *Educational Leadership*, 59(3), 6–12.

Fisher, C. B., Busch-Rossnagel, N. A., Jopp, D. S., & Brown, J. L. (2012). Applied developmental science, social justice, and socio-political well-being. *Applied Developmental Science*, 16(1), 54–64. doi:10.1080/10888691.2012.642786

Flook, L., Goldberg, S. B., Pinger, L., Bonus, K., & Davidson, R. J. (2013). Mindfulness for teachers: A pilot study to assess effects on stress, burnout and teaching efficacy.

Mind, Brain, and Education, *7*(3), 182–195. doi:10.1111/mbe.12026

Flook, L., Goldberg, S. B., Pinger, L., & Davidson, R. J. (2015). Promoting prosocial behavior and self-regulatory skills in preschool children through a mindfulness-based kindness curriculum. *Developmental Psychology*, *51*(1), 44–51. doi:10.1037/a0038256

Ford, D. L., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach.* Newbury Park, CA: Sage.

Foster, H., & Hagan, J. (2015). Punishment regimes and the multilevel effects of parental incarceration: Intergenerational, intersectional, and interinstitutional models of social equality and systemic exclusion. *Annual Review of Sociology*, *41*, 135–158. doi:10.1146/annurev-soc-073014-112437

Furstenberg, F. F., Elder, G. H., Cook, T. D., Eccles, J., & Sameroff, A. (1999). *Managing to make it: Urban families in high-risk neighborhoods.* Chicago, IL: University of Chicago Press.

Galinsky, E., Bezos, J., McClelland, M., Carlson, S. M., & Zelazo, P. D. (2017). Civic science for public use: Mind in the making and vroom. *Child Development*, *88*(5), 1409–1418.

Galvan, A., Hare, T. A., Parra, C. E., Penn, J., Voss, H., Glover, G., & Casey, B. J. (2006). Earlier development of the accumbens relative to orbitofrontal cortex might underlie risk-taking behavior in adolescents. *Journal of Neuroscience*, *26*(25), 6885–6892.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice.* New York, NY: Teachers College Press.

Gay, G., & Kirkland, K. N. (2003). Developing cultural critical consciousness and self-reflection in preservice teacher education. *Theory into Practice*, *42*(3), 181–187. Retrieved from https://muse.jhu.edu/article/45872

Geisz, M. B., & Nakashian, M. (2016). *Adolescent wellness: Current perspectives and future opportunities in research, policy, and practice.* Unpublished report, Robert Wood Johnson Foundation.

Gestdottir, G., & Lerner, R. M. (2008). Positive development in adolescence: The development and role of intentional self-regulation. *Human Development*, *51*, 202–224. doi:10.1159/000135757

Gibson, J. J. (1979). *The ecological approach to perception.* Hillsdale, NJ: Erlbaum.

Gilliam, W. S., & Shahar, G. (2006). Preschool and child care expulsion and suspension: Rates and predictors in one state. *Infants & Young Children*, *19*(3), 228–245. doi:10.1097/00001163-200607000-00007

Goldstein, H., Kaczmarek, L. A., & English, K. M., (Eds.). (2002). *Promoting social communication: Children with developmental disabilities from birth to adolescence.* Baltimore, MD: Brookes.

Goodnow, J. J., & Lawrence, J. A. (2015). Children and cultural context. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 746–788). Hoboken, NJ: Wiley.

Gornick, M. E. (2002). *Disparities in health care: Methods for studying the effects of race, ethnicity, and SES on access, use, and quality of health care.* Washington, DC: National Academies Press. Retrieved from http://www.nationalacademies.org/hmd/~/media/Files/Activity%20Files/Quality/NHDRGuidance/DisparitiesGornick.pdf.

Grasso, D. J., Dierkhising, C. B., Branson, C. E., Ford, J. D., & Lee, R. (2016). Developmental patterns of adverse childhood experiences and current symptoms and impairment in youth referred for trauma-specific services. *Journal of Abnormal Child Psychology*, *44*(5), 871–886. doi:10.1007/s10802-015-0086-8

Gregory, A., & Korth, J. (2016). Teacher–student relationships and behavioral engagement in the classroom. In K. R. Wentzel, & G. B. Ramani (Eds.), *Handbook of social influences in school contexts: Social-emotional, motivation, and cognitive outcomes* (pp. 178–191). New York, NY: Routledge.

Griffiths, P. E., & Hochman, A. (2015). Developmental systems theory. *eLS*, 1–7. doi:10.1002/9780470015902.a0003452.pub2

Grusec, J. E., & Davidov, M. (2016). Socialization in the family: The role of parents. In J. E. Grusec, & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (2nd ed., pp. 284–308). New York, NY: Guilford Press.

Gustafsson, P. E., San Sebastian, M., Janlert, U., Theorell, T., Westerlund, H., & Hammarström, A. (2014). Life-course accumulation of neighborhood disadvantage and allostatic load: Empirical integration of three social determinants of health frameworks. *American Journal of Public Health*, *104*(5), 904–910. doi:10.2105/AJPH.2013.301707

Halfon, N., Shulman, E., & Hochstein, M. (2001). Brain development in early childhood. In N. Halfon, E. Shulman, & M. Hochstein (Eds.), *Building community systems for young children* (pp. 1–26). Los Angeles, CA: UCLA Center for Healthier Children, Families and Communities.

Hamm, J. V., Farmer, T. W., Dadisman, K., Gravelle, M., & Murray, A. R. (2011). Teachers' attunement to students' peer group affiliations as a source of improved student experiences of the school social-affective context following the middle school transition. *Journal of Applied Developmental Psychology*, *32*(5), 267–277. doi:10.1016/j.appdev.2010.06.003

Hammond, Z. (2016). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students.* Thousand Oaks, CA: Corwin.

Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development*, *76*(5), 949–967. Retrieved from http://www.jstor.org/stable/3696607

Hamre, B. K., & Pianta, R. C. (2010). Classroom environments and developmental processes. In J. L. Meece, & J. S. Eccles (Eds.), *Handbook of research on schools, schooling, and human development* (pp. 25–41). London, UK: Routledge.

Harry, B., Klingner, J. K., & Hart, J. (2005). African American families under fire: Ethnographic views of family strengths. *Remedial and Special Education*, *26*(2), 101–112. doi:10.1177/07419325050260020501

Hastings, P. D., & Grusec, J. E. (1998). Parenting goals as organizers of responses to parent– child disagreement.

Developmental Psychology, *34*(3), 465–479. doi:10.1037/0012-1649.34

Hay, D. F., Payne, A., & Chadwick, A. (2004). Peer relations in childhood. *Journal of Child Psychology and Psychiatry*, *45*(1), 84–108. doi:10.1046/j.0021-9630.2003.00308.x

Herbers, J. E., Reynolds, A. J., & Chen, C. C. (2013). School mobility and developmental outcomes in young adulthood. *Development and Psychopathology*, *25*(2), 501–515. doi:10.1017/S0954579412001204

Hicks, B. M., Johnson, W., Durbin, C. E., Blonigen, D. M., Iacono, W. G., & McGue, M. (2014). Delineating selection and mediation effects among childhood personality and environmental risk factors in the development of adolescent substance abuse. *Journal of Abnormal Child Psychology*, *42*(5), 845–859.

Hoagwood, K. E. (2005). Family-based services in children's mental health: a research review and synthesis. *Journal of Child Psychology and Psychiatry*, *46*(7), 690–713.

Hochberg, Z., Feil, R., Constancia, M., Fraga, M., Junien, C., Carel, J.-C., … Albertsson-Wikland, K. (2011). Child health, developmental plasticity, and epigenetic programming. *Endocrine Reviews*, *32*(2), 159–224. doi:10.1210/er.2009-0039

Holman, E. A., Garfin, D. R., & Silver, R. C. (2014). Media's role in broadcasting acute stress following the Boston Marathon bombings. *Proceedings of the National Academy of Sciences*, *111*(1), 93–98.

Holmbeck, G. N., & O'Donnell, K. (1991). Discrepancies between perceptions of decision making and behavioral autonomy. *New Directions for Child Development*, *51*, 51–69. doi:10.1002/cd.23219915105

Hook, J. N., Farrell, J. E., Davis, D. E., DeBlaere, C., Van Tongeren, D. R., & Utsey, S. O. (2016). Cultural humility and racial micro aggressions in counseling. *Journal of Counseling Psychology*, *63*(3), 269277.

Hook, J. N., & Watkins, C. E., Jr. (2015). Cultural humility: The cornerstone of positive contact with culturally different individuals and groups? *American Psychologist*, *70*(7), 661–662. doi:10.1037/a0038965

Huang, J. (2013). Intergenerational transmission of educational attainment: The role of household assets. *Economics of Education Review*, *33*, 112–123.

Institute of Medicine, & National Research Council (IOM, & NRC). (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC: The National Academies Press.

Institute of Medicine, & National Research Council (IOM, & NRC). (2011). *The science of adolescent risk-taking: Workshop report*. Washington, DC: The National Academies Press.

Institute of Medicine, & National Research Council (IOM, & NRC). (2015a). *Investing in the health and well-being of young adults*. Washington, DC: The National Academies Press.

Institute of Medicine, & National Research Council (IOM, & NRC). (2015b). *Transforming the workforce for children birth through age 8: A unifying foundation*. Washington, DC: The National Academies Press.

Jakonen, T. (2016). The integration of content and language in students' task answer production in the bilingual classroom. *International Journal of Bilingual Education and Bilingualism*. doi:10.1080/13670050.2016.1267694

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*, 491–525.

Johnson, S. B., Riis, J. L., & Noble, K. G. (2016). State of the art review: Poverty and the developing brain. *Pediatrics*, *137*(4), 1–16. Retrieved from http://pediatrics.aappublications.org/content/early/2016/03/03/peds.2015-3075

Johnson, S. B., Riley, A. W., Granger, D. A., & Riis, J. (2013). The science of early life toxic stress for pediatric practice and advocacy. *Pediatrics*, *131*(2), 319–327. doi:10.1542/peds.2012-0469

Johnson, S. M., Kraft, M. A., & Papay, J. P. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement. *Teachers College Record*, *114*(10), 1–39. Retrieved from https://scholar.harvard.edu/mkraft/publications/how-context-matters-high-need-schools-effects-teachers%E2%80%99-working-conditions-their

Johnson, V. A., Kemp, A. H., Heard, R., Lennings, C. J., & Hickie, I. B. (2015). Childhood versus adolescent-onset antisocial youth with conduct disorder: Psychiatric illness, neuropsychological and psychosocial function. *PLoS ONE*, *10*(4), e0121627. doi:10.1371/journal.pone.0121627

Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: From programs to strategies. *Social Policy Report*, *26*(4), 1–33. Retrieved from https://www.srcd.org/sites/default/files/documents/spr_264_final_2.pdf

Jones, S. M., & Kahn, J. (2017). *The evidence base for how we learn: Supporting students' social, emotional, and academic development. Consensus statements of evidence from the Council of Distinguished Scientists*. Washington, DC: National Commission on Social, Emotional, and Academic Development & the Aspen Institute. Retrieved from https://assets.aspeninstitute.org/content/uploads/2017/09/SEAD-Research-Brief-9.12_updated-web.pdf.

Jouriles, E. N., McDonald, R., Slep, A. M., Heyman, R. E., & Garrido, E. (2008). Child abuse in the context of domestic violence: Prevalence, explanations, and practice implications. *Violence and Victims*, *23*(2), 221–235.

Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., Toyinbo, P., … Wilcox, H. C. (2008). Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes. *Drug and Alcohol Dependence*, *95*(Suppl. 1), S5–S28. doi:10.1016/j.drugalcdep.2008.01.004

Kellam, S. G., Mackenzie, A. C., Brown, C. H., Poduska, J. M., Wang, W., Petras, H., & Wilcox, H. C. (2011). The good behavior game and the future of prevention and treatment. *Addiction Science & Clinical Practice*, *6*(1), 73–84.

Kellam, S. G., & Rebok, G. W. (1992). Building developmental and etiological theory through epidemiologically based preventive intervention trials. In J. McCord, & R. E. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence* (pp. 162–195). New York, NY: Guilford Press.

Kendziora, K., & Osher, D. (2004). Fostering resilience among youth in the juvenile justice system. In C. C. Clauss-Ehlers, & M. Weist (Eds.), *Community planning to foster resiliency*

in children (pp. 177–196). New York, NY: Kluwer Academic.

Kendziora, K., Osher, D., & Carey, M. (2014). *Say yes to education student monitoring system: Updated literature review*. Washington, DC: American Institutes for Research.

Kim, P., Strathearn, L., & Swain, J. E. (2016). The maternal brain and its plasticity in humans. *Hormones and Behavior*, *77*, 113–123. doi:10.1016/j.yhbeh.2015.08.001

Kim, P., & Watamura, S. E. (2015). *Two open windows: Infant and parent neurobiological change*. Washington, DC: Aspen Institute.

King, M. A., Sins, A., & Osher, D. (2007). *How is cultural competence integrated into education?*. Washington, DC: American Institutes for Research, Center for Effective Collaboration and Practice.

Kremer, K. P., Flower, A., Huang, J., & Vaughn, M. G. (2016). Behavior problems and children's academic achievement: A test of growth-curve models with gender and racial differences. *Children and Youth Services Review*, *67*, 95–104. doi:10.1016/j.childyouth.2016.06.003

Kupchik, A., & Ward, G. (2014). Race, poverty, and exclusionary school security: An empirical analysis of U.S. elementary, middle, and high schools. *Youth Violence and Juvenile Justice*, *12*, 332–354. doi:10.1177/1541204013503890

Lansford, J. E., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2016). A public health perspective on school dropout and adult outcomes: A prospective study of risk and protective factors from age 5 to 27. *The Journal of Adolescent Health*, *58*(6), 652–658. doi:10.1016/j.jadohealth.2016.01.014

Lee, C. D. (2010). Soaring above the clouds, delving the ocean's depths: Understanding the ecologies of human learning and the challenge for education science. *Educational Researcher*, *39*(9), 643–655. doi:10.3102/0013189x10392139

Lee, C. D., Spencer, M. B., & Harpalani, V. (2003). Every shut eye ain't sleep: Studying how people live culturally. *Educational Researcher*, *32*(5), 6–13. doi:10.3102/0013189x032005006

Lee, K. H., Siegle, G. J., Dahl, R. E., Hooley, J. M., & Silk, J. S. (2015). Neural responses to maternal criticism in healthy youth. *Social Cognitive and Affective Neuroscience*, *10*(7), 902–912. doi:10.1093/scan/nsu133

Lemerise, E. A., & Arsenio, W. F. (2000). An integrated model of emotion processes and cognition in social information processing. *Child Development*, *71*(1), 107–118.

Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among American youth*. Thousand Oaks, CA: Sage.

Lerner, R. M., Bowers, E. P., Geldhof, G. J., Gestsdóttir, S., & DeSouza, L. (2012). Promoting positive youth development in the face of contextual change and challenges: The roles of individual strengths and ecological assets. *New Directions for Youth Development*, *135*, 119–128. doi:10.1002/yd.20034

Leventhal, T., Dupéré, V., & Shuey, E. A. (2015). Children in neighborhoods. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 493–533). Hoboken, NJ: Wiley.

Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *American Journal of Sociology*, *44*(6), 868–896. doi:10.1086/218177

Li, J., & Julian, M. M. (2012). Developmental relationships as the active ingredient: a unifying working hypothesis of "what works" across intervention settings. *The American Journal of Orthopsychiatry*, *82*(2), 157–166. doi:10.1111/j.1939-0025.2012.01151.x

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, *139*(1), 1–34. doi:10.1037/a0029321

Lucey, H. (2010). Families, siblings, and identities. In M. Wetherell, & C. Talpade Mohanty (Eds.), *The SAGE handbook of identities* (pp. 476–491). London, UK: Sage.

Lund, T., Dearing, E., & Zachrisson, H. D. (2017). Is affluence a risk for adolescents in Norway? *Journal of Research on Adolescence*, *27*(3), 628–643. doi:0.1111/jora.12304

Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In: D. Cicchetti, & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Risk, disorder, and adaptation* (3rd ed., pp. 740–795). New York, NY: Wiley.

Luthar, S. S., Barkin, S. H., & Crossman, E. J. (2013). "I can, therefore I must": Fragility in the upper-middle classes. *Development and Psychopathology*, 25th Anniversary Special Issue, *25*, 1529–1549. PMCID: PMC4215566.

Luthar, S. S., & Ciciolla, L. (2016). What it feels like to be a mother: Variations by children's developmental stages. *Developmental Psychology*, *52*(1), 143–154. doi:10.1037/dev0000062

Luthar, S. S., Crossman, E. J., & Small, P. J. (2015). Resilience and adversity. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 3. Socioemotional processes* (7th ed., pp. 247–286). Hoboken, NJ: Wiley.

Luthar, S. S., Sawyer, J. A., & Brown, P. J. (2006). Conceptual issues in studies of resilience: Past, present, and future research. *Annals of the New York Academy of Sciences*, *1094*, 105–115. doi:10.1196/annals.1376.009

Luthar, S. S., Small, P. J., Ciciolla, L. (2017). Adolescents from upper middle class communities: Substance misuse and addiction across early adulthood. *Development and Psychopathology*. First view: DOI: https://doi.org/10.1017/S0954579417000645

Mah, V. K., & Ford-Jones, E. L. (2012). Spotlight on middle childhood: Rejuvenating the "forgotten years." *Paediatrics and Child Health*, *17*(2), 81–83. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3299351/.

Main, M. (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) model of attachment: Findings and directions for future research. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 127–159). New York, NY: Routledge.

Mallett, C. A. (2015). The school-to-prison pipeline: A critical review of the punitive paradigm shift. *Child and Adolescent Social Work Journal*, *33*(1), 15–24. doi:10.1007/s10560-015-0397-1

Martin, M. J., Conger, R. D., Schofield, T. J., Dogan, S. J., Widaman, K. F., Donnellan, M. B., & Neppl, T. K. (2010). Evaluation of the interactionist model of socioeconomic status and problem behavior: A developmental cascade across generations. *Development*

and Psychopathology, 22(3), 695–713. doi:10.1017/S0954579410000374

Martin, M. J., McCarthy, B., Conger, R. D., Gibbons, F. X., Simons, R. L., Cutrona, C. E., & Brody, G. H. (2011). The enduring significance of racism: Discrimination and delinquency among Black American youth. *Journal of Research on Adolescence*, 21(3), 662–676. doi:10.1111/j.1532-7795.2010.00699.x

Masten, A. S. (2014). *Ordinary magic: Resilience in development*. New York, NY: Guilford Press.

Masten, A. S., & Cicchetti, D. (2010). Developmental cascades. *Development and Psychopathology*, 22(3), 491–495. doi:10.1017/S0954579410000222

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, 53(2), 205.

Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., … Tellegen, A. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41(5), 733–746. doi:10.1037/0012-1649.41.5.733

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20(3), 709–734. Retrieved from http://www.jstor.org/stable/258792.

Mayer, R. E. (2014). Research-based principles for designing multimedia instruction. In V. A. Benassi, C. E. Overson, & C. M. Hakala (Eds.), *Applying science of learning in education: Infusing psychological science into the curriculum* (pp. 7–19). Washington, DC: American Psychological Association. Retrieved from http://teachpsych.org/ebooks/asle2014/index.php.

McHale, S. M., Updegraff, K. A., & Whiteman, S. D. (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family*, 74(5), 913–930. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3956653/.

McLaughlin, K. A., Hatzenbuehler, M. L., & Hilt, L. M. (2009). Emotion dysregulation as a mechanism linking peer victimization to internalizing symptoms in adolescents. *Journal of Consulting and Clinical Psychology*, 77(5), 894–904.

Meaney, M. J., & Szyf, M. (2005). Environmental programming of stress responses through DNA methylation: life at the interface between a dynamic environment and a fixed genome. *Dialogues in Clinical Neuroscience*, 7(2), 103–123.

Menting, A. T., Orobio de Castro, B., & Matthys, W. (2013). Effectiveness of the Incredible Years parent training to modify disruptive and prosocial child behavior: A meta-analytic review. *Clinical Psychology Review*, 33(8), 901–913. doi:10.1016/j.cpr.2013.07.00

Merton, R. K. (1957). *Social theory and social structure*. Glencoe, IL: Free Press.

Mills-Koonce, W., Willoughby, M., Garrett-Peters, P., Wagner, N., & Vernon-Feagans, L. (2016). The interplay among socioeconomic status, household chaos, and parenting in the prediction of child conduct problems and callous-unemotional behaviors. *Development and Psychopathology*, 28(3), 757–771. doi:10.1017/S0954579416000298

Murray, D. W., Rosanbalm, K., Christopoulos, C., & Hamoudi, A. (2015). *Self-regulation and toxic stress: Foundations for understanding self-regulation from an applied developmental perspective* (OPRE Report #2015-21). Washington, DC: U.S. Department of Health and Human Services, Office of Planning, Research and Evaluation, Administration for Children and Families.

Nagaoka, J., Farrington, C. A., Ehrlich, S. B., Heath, R. D., Johnson, D. W., Dickson, S., … Hayes, K. (2015). *Foundations for young adult success: A developmental framework*. Chicago, IL: The University of Chicago Consortium on School Research.

Nance, J. P. (2013). Students, security, and race. *Emory Law Journal*, 63(1), 1–57. Retrieved from http://scholarship.law.ufl.edu/cgi/viewcontent.cgi?article=1390&context=facultypub.

National Academies of Sciences, Engineering, & Medicine. (2016). *Parenting matters: Supporting parents of children ages 0–8*. Washington, DC: National Academies Press.

National Association for the Education of Young Children. (2016). *Statement from NAEYC on implicit bias research*. Washington, DC: Author.

National Partnership for Action to End Health Disparities. (2011). *National stakeholder strategy for achieving health equity*. Rockville, MD: U.S. Department of Health & Human Services, Office of Minority Health. Retrieved from https://www.minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=33&ID=286.

National Scientific Council on the Developing Child. (2004). *Young children develop in an environment of relationships (Working Paper 1)*. Cambridge, MA: Harvard University, Center on the Developing Child. Retrieved from https://46y5eh11fhgw3ve3ytpwxt9r-wpengine.netdna-ssl.com/wp-content/uploads/2004/04/Young-Children-Develop-in-an-Environment-of-Relationships.pdf.

Nelson, E. E., Leibenluft, E., McClure, E. B., & Pine, D. S. (2005). The social re-orientation of adolescence: A neuroscience perspective on the process and its relation to psychopathology. *Psychological Medicine*, 35(2), 163–174.

Nix, R. L., Bierman, K. L., Heinrichs, B. S., Gest, S. D., Welsh, J. A., & Domitrovich, C. E. (2016). The randomized-controlled trial of Head Start REDI: Sustained effects on developmental trajectories of social-emotional functioning. *Journal of Consulting and Clinical Psychology*, 84(4), 310–322. http://doi.org/10.1037/a0039937

Norwalk, K., Hamm, J., Farmer, T., & Barnes, K. (2016). Improving the school context of early adolescence through teacher attunement to victimization. *Journal of Early Adolescence*, 36(7), 989–1009. doi:10.1177/0272431615590230

Oberle, E., & Schonert-Reichl, K. A. (2016). Stress contagion in the classroom? The link between classroom teacher burnout and morning cortisol in elementary school students. *Social Science & Medicine*, 159, 30–37. doi:10.1016/j.socscimed.2016.04.031

O'Connell, M. E., Boat, T., & Warner, K. E. (Eds.). (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC: National Academies Press.

Olds, D. L., Robinson, J., Pettitt, L., Luckey, D. W., Holmberg, J., Ng, R. K., … Henderson, C. R. (2004). Effects of home

visits by paraprofessionals and by nurses: Age 4 follow-up results of a randomized trial. *Pediatrics*, *114*(6), 1560–1568.

Oppedal, B., & Toppelberg, C. (2016). Culture competence: A developmental task of acculturation. In J. W. Berry, & D. L. Sam (Eds.), *The Cambridge handbook of acculturation psychology revised* (pp. 71–92). Cambridge, UK: Cambridge University Press.

Osher, D. (2015). The pedagogy of real talk and the promotion of student well-being and success. In P. Hernandez (Ed.), *The pedagogy of real talk: Engaging, teaching, and connecting with students at risk* (pp. viii–ix). New York, NY: Corwin.

Osher, D., Bear, G., Sprague, J., & Doyle, W. (2010). How we can improve school discipline? *Educational Researcher*, *39*(1), 48–58. doi:10.3102/0013189x09357618

Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2017a). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, Manuscript submitted for publication.

Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2017b). Drivers of human development: How relationships and con-text shape learning and development. *Applied Developmental Science*, Manuscript submitted for publication.

Osher, D., Cartledge, G., Oswald, D., Artilles, A. J., & Coutinho, M. (2004). Issues of cultural and linguistic competency and disproportionate representation. In R. Rutherford, M. Quinn, & S. Mather (Eds.), *Handbook of research in behavioral disorders* (pp. 54–77). New York, NY: Guilford Press.

Osher, D., & Chasin, E. (2016). Bringing together schools and the community: The case of Say Yes to Education. In J. F. Zaff, E. Pufall Jones, A. E. Donlan, & S. A. Anderson (Eds.), *Optimizing child and youth development through comprehensive community initiatives* (pp. 72–104). New York, NY: Psychology Press.

Osher, D., & Kendziora, K. (2010). Building conditions for learning and healthy adolescent development: Strategic approaches. In B. Doll, W. Pfohl, & J. Yoon (Eds.), *Handbook of youth prevention science* (pp. 121–140). New York, NY: Routledge.

Osher, D., Kendziora, K., Spier, E., & Garibaldi, M. L. (2014). School influences on child and youth development. In Z. Sloboda, & H. Petras (Eds.), *Advances in prevention science: Vol. 1. Defining prevention science* (pp. 151–169). New York, NY: Springer.

Osher, D., Kidron, Y., Brackett, M., Dymnicki, A., Jones, S., & Weissberg, R. P. (2016). Advancing the science and practice of social and emotional learning: Looking back and moving forward. *Review of Research in Education*, *40*(1), 644–681. doi:10.3102/0091732x16673595

Osher, D., Woodruff, D., & Sims, A. E. (2002). Schools make a difference: The overrepresentation of African American youth in special education and the juvenile justice system. In D. J. Losen, & G. Orfield (Eds.), *Racial inequity in special education* (pp. 93–116). Cambridge, MA: Harvard Education Press.

Osher, T., Garay, L., Jennings, B., Jimerson, D., Markus, S., & Martinez, K. (2011). *Closing the gap: Cultural perspectives on family driven care*. Washington, DC: Technical Assistance Partnership for Child and Family Mental Health.

Overton, W. F. (2010). Life-span development: Concepts and issues. In R. M. Lerner, W. F. Overton, A. M. Freund, & M. E. Lamb (Eds.), *The handbook of life-span development* (pp. 1–29). Hoboken, NJ: Wiley.

Overton, W. F. (2015). Processes, relations and relational-developmental-systems. In W. F. Overton, & P. C. M. Molenaar (Eds.), *Handbook of child psychology and developmental science: Vol. 1. Theory and method* (7th ed., pp. 9–62). Hoboken, NJ: Wiley.

Overton, W. F., & Müller, U. (2012). Metatheories, theories, and concepts in the study of development. In I. B. Weiner (Ed.), *Handbook of psychology: Vol. 6. Developmental psychology* (2nd ed., pp. 19–58). New York, NY: Wiley.

Oyama, S. (2000). *Evolution's eye: A systems view of the biology–culture divide*. Durham, NC: Duke University Press.

Oyserman, D., & Lewis, N., Jr. (2017). Seeing the destination AND the path: Using identity-based motivation to understand racial disparities in achievement and what we can do about them. *Social Issues and Policy Review*, *11*(1), 159–194. doi:10.1111/sipr.12030

Pachter, L. M., & Coll, C. G. (2009). Racism and child health: A review of the literature and future directions. *Journal of Developmental and Behavioral Pediatrics*, *30*(3), 255–263. doi:10.1097/DBP.0b013e3181a7ed5a

Pager, D., & Shepherd, H. (2008). The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology*, *34*, 181–209. doi:10.1146/annurev.soc.33.040406.131740

Park, S., & Schepp, K. G. (2015). A systematic review of research on children of alcoholics: Their inherent resilience and vulnerability. *Journal of Child and Family Studies*, *24*(5), 1222–1231. doi:10.1007/s10826-014-9930-7

Parker, J. G., Rubin, K. H., Price, J. M., & DeRosier, M. E. (1995). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti, & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Developmental neuroscience* (3rd ed., pp. 96–161). Oxford, UK: Wiley.

Patterson, C. J., & Hastings, P. D. (2007). Socialization in the context of family diversity. In J. E. Grusec, & P. D. Hastings (Eds.), *Handbook of socialization* (pp. 328–351). New York, NY: Guilford Press.

Perkins, K. L., & Sampson, R. J. (2015). Compounded deprivation in the transition to adulthood: The intersection of racial and economic inequality among Chicagoans, 1995–2013. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *1*(1), 35–54. doi:10.7758/rsf.2015.1.1.03

Perry, B., & Morris, E. (2014). Suspending progress: Collateral consequences of exclusionary punishment in public schools. *American Sociological Review*, *79*(6), 1067–1087. doi:10.1177/0003122414556308

Petitclerc, A., Gatti, U., Vitaro, F., & Tremblay, R. E. (2013). Effects of juvenile court exposure on crime in young adulthood. *Journal of Child Psychology and Psychiatry*, *54*(3), 291–297. doi:10.1111/j.1469-7610.2012.02616.x/pdf

Pianta, B. (2016). Classroom processes and teacher-student interaction: Integration with a developmental psycho-pathology perspective. In D. Cicchetti (Ed.), *Developmental*

psychopathology: Vol. 4. Risk, resilience, and intervention (3rd ed., pp. 770–814). Hoboken, NJ: Wiley.

Pierce, S., Gould, D., & Camiré, M. (2017). Definition and model of life skills transfer. *International Review of Sport and Exercise Psychology*, *10*(1), 186–211. doi:10.1080/1750984X.2016.1199727

Plant, D. T., Barker, E. D., Waters, C. S., Pawlby, S., & Pariante, C. M. (2013). Intergenerational transmission of maltreatment and psychopathology: The role of antenatal depression. *Psychological Medicine*, *43*(3), 519–528. doi:10.1017/S0033291712001298

Powell, B., Hamilton, L., Manago, B., & Cheng, S. (2016). Implications of changing family forms for children. *Annual Review of Sociology*, *42*(1), 301–322. doi:10.1146/annurev-soc-081715-074444

Priest, N., Paradies, Y., Trenerry, B., Truong, M., Karlsen, S., & Kelly, Y. (2013). A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Social Science & Medicine (1982)*, *95*, 115–127. doi:10.1016/j.socscimed.2012.11.031

Prinstein, M. J., Rancourt, D., Guerry, J. D., & Browne, C. B. (2009). Peer reputations and psychosocial adjustment. In K. H. Rubin, M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 548–567). New York, NY: Guilford Press.

Raver, C. C., & Knitzer, J. (2002). *Ready to enter. Emotions matter: Making the case for the role of young children's emotional development for early school readiness among three- and four-year-old children*. New York, NY: National Center for Children in Poverty.

Reardon, S. F., & Bischoff, K. (2011). Income inequality and income segregation. *American Journal of Sociology*, *116*(4), 1092–1153. doi:10.1086/657114

Reiss, F. (2013). Socioeconomic inequalities and mental health problems in children and adolescents: A systematic review. *Social Science & Medicine*, *90*, 24–31. doi:10.1016/j.socscimed.2013.04.026

Rhodes, J. E. (2004). The critical ingredient: Caring youth–staff relationships in after-school settings. *New Directions for Student Leadership*, *2004*(101), 145–161.

Richerson, P. J., & Boyd, R. (2005). *Not by genes alone: How culture transformed human evolution*. Chicago, IL: University of Chicago Press.

Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. doi:10.3102/0034654311421793

Rose, T., Rouhani, P., & Fischer, K. W. (2013). The science of the individual. *Mind, Brain, and Education*, *7*(3), 152–158.

Ross, S., & Peselow, E. (2009). The neurobiology of addictive disorders. *Clinical Neuropharmacology*, *32*(5), 269–276.

Rubin, K. H., Bukowski, W. M., & Bowker, J. C. (2015). Children in peer groups. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes* (7th ed., pp. 175–222). Hoboken, NJ: Wiley.

Rubin, K. H., Coplan, R. J., Chen, X., Buskirk, A., & Wojslawowicz, J. C. (2005). Peer relationships in childhood. In M. H. Bornstein, & M. E. Lamb (Eds.),

Developmental science: An advanced textbook (5th ed., pp. 469–512). New York, NY: Psychology Press.

Rumberger, R. W. (2003). The causes and consequences of student mobility. *Journal of Negro Education*, *72*(1), 6–21. doi:10.2307/3211287

Ryan, W. (1972). *Blaming the victim*. New York, NY: Vintage Books.

Sampson, R. J., Sharkey, P., & Raudenbush, S. (2008). Durable effects of concentrated disadvantage on verbal ability among African-American children. *Proceedings of the National Academy of Sciences*, *105*, 845–852. doi:10.1073/pnas.0710189104

Sandstrom, H., Giesen, L., & Chaudry, A. (2012). *How contextual constraints affect low-income working parents' child care choices*. Washington, DC: Urban Institute. Retrieved from https://www.urban.org/sites/default/files/publication/32726/412511-How-Contextual-Constraints-Affect-Low-Income-Working-Parents-Child-Care-Choices.PDF.

Sass, T. R., Hannaway, J., Xu, Z., Figlio, D. N., & Feng, L. (2012). Value added of teachers in high-poverty schools and lower poverty schools. *Journal of Urban Economics*, *72*(2), 104–122. doi:10.1016/j.jue.2012.04.004

Sawhill, I. V., & Karpilow, Q. (2014). *How much could we improve children's life chances by intervening early and often? (CCF Brief 54)*. Washington, DC: Brookings Institution, Center on Children and Families.

Scales, P. C., Benson, P. L., & Roehlkepartain, E. C. (2011). Adolescent thriving: The role of sparks, relationships, and empowerment. *Journal of Youth and Adolescence*, *40*(3), 263–277.

Schofield, T. J., Martin, M. J., Conger, R. D., Neppl, T. K., Donnellan, M. B., & Conger, K. J. (2011). Intergenerational transmission of adaptive functioning: A test of the interactionist model of SES and human development. *Child Development*, *82*(1), 33–47. doi:10.1111/j.1467-8624.2010.01539.x

Schweinhart, L. J., Montie, H., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40*. Ypsilanti, MI: HighScope Press.

Sellers, R. M., Copeland-Linder, N., Martin, P. P., & Lewis, R. (2006). Racial identity matters: The relationship between racial discrimination and psychological functioning in African American adolescents. *Journal of Research on Adolescence*, *16*(2), 187–216.

Semke, C. A., Garbacz, S. A., Kwon, K., Sheridan, S. M., & Woods, K. E. (2010). Family involvement for children with disruptive behaviors: The role of parenting stress and motivational beliefs. *Journal of School Psychology*, *48*(4), 293–312. doi:10.1016/j.jsp.2010.04.001

Sennett, R., & Cobb, J. (1972). *The hidden injuries of class*. Cambridge, UK: Cambridge University Press.

Sherman, L. E., Rudie, J. D., Pfeifer, J. H., Masten, C. L., McNealy, K., & Dapretto, M. (2014). Development of the default mode and central executive networks across early adolescence: A longitudinal study. *Developmental Cognitive Neuroscience*, *10*, 148–159. doi:10.1016/j.dcn.2014.08.002

Shonkoff, J. P. (2012). Leveraging the biology of adversity to address the roots of disparities in health and development.

Proceedings of the National Academy of Sciences, *109*(Suppl. 2), 17302–17307.

Shonkoff, J. P. (2016). Capitalizing on advances in science to reduce the health consequences of early childhood adversity. *JAMA Pediatrics*, *170*(10), 1003–1007.

Shonkoff, J. P., Richter, L., van der Gaag, J., & Bhutta, Z. A. (2012). An integrated scientific framework for child survival and early childhood development. *Pediatrics*, *129*(2), e460–e472.

Siegel, D. J. (1999). *The developing mind: Toward a neurobiology of interpersonal experience*. New York, NY: Guilford Press.

Siegel, D. J. (2012). *The developing mind: How relationships and the brain interact to shape who we are* (2nd ed.). New York, NY: Guilford Press.

Siegel, D. J. (2013). *Brainstorm: The power and purpose of the teenage brain*. New York, NY: Penguin Putnam.

Silva, K., Chein, J., & Steinberg, L. (2016). Adolescents in peer groups make more prudent decisions when a slightly older adult is present. *Psychological Science*, *27*(3), 322–330.

Sisk, C. L., & Zehr, J. L. (2005). Pubertal hormones organize the adolescent brain and behavior. *Frontiers in Neuroendocrinology*, *26*(3–4), 163–174.

Sitnick, S. L., Shaw, D. S., Gill, A., Dishion, T., Winter, C., Waller, R., … Wilson, M. (2015). Parenting and the family check-up: Changes in observed parent-child interaction following early childhood intervention. *Journal of Clinical Child and Adolescent Psychology*, *44*(6), 970–984. doi:10.1080/15374416.2014.940623

Skiba, R. J., Horner, R. H., Chung, C.-G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, *40*(1), 85–107.

Slavich, G. M., & Cole, S. W. (2013). The emerging field of human social genomics. *Clinical Psychological Science*, *1*(3), 331–348.

Smetana, J. G. (2011). *Adolescents, families, and social development: How teens construct their worlds*. New York, NY: Wiley.

Smith, C., McGovern, G., Larson, R., Hillaker, B., & Peck, S. C. (2016). *Preparing youth to thrive: Promising practices for social and emotional learning*. Washington, DC: Forum for Youth Investment.

Smith, J., Brooks-Gunn, J., & Klebanov, P. (1997). The consequences of living in poverty on young children's cognitive development. In G. J. Duncan, & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 132–189). New York, NY: Russell Sage Foundation.

Smith, J. D., Dishion, T. J., Shaw, D. S., Wilson, M. N., Winter, C. C., & Patterson, G. R. (2014). Coercive family process and early-onset conduct problems from age 2 to school entry. *Development and Psychopathology*, *26*(4, Pt. 1), 917–932. doi:10.1017/S0954579414000169

Snow, K. (2016). *Research news you can use: Pretend play is important but its role in learning is complex*. Washington, DC: National Association for the Education of Young Children. Retrieved from http://www.naeyc.org/content/research-news-pretend-play-is-important

Snyder, J. J., Schrepferman, L. P., Bullard, L., McEachern, A. D., & Patterson, G. R. (2012). Covert antisocial behavior, peer deviancy training, parenting processes, and sex differences in the development of antisocial behavior during childhood. *Development and Psychopathology*, *24*(3), 1117–1138.

Spencer, M. B. (1995). Old issues and new theorizing about African American youth: A phenomenological variant of ecological systems theory. In R. L. Taylor (Ed.), *Black youth: Perspectives on their status in the United States* (pp. 37–69). Westport, CT: Praeger.

Spencer, M. B. (2007). Phenomenology and ecological systems theory: Development of diverse groups. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 1. Theory and method* (6th ed., pp. 829–893). Hoboken, NJ: Wiley.

Spencer, M. B. (2017). Privilege and critical race perspectives' intersectional contributions to a systems theory of human development. In N. Budwig, E. Turiel, & P. Zelazo (Eds.), *New perspectives on human development* (pp. 258–286). Cambridge, England: Cambridge University Press.

Spencer, M. B., Swanson, D. P., & Harpalani, V. (2015). Conceptualizing the self: Contributions of normative human processes, diverse contexts and opportunity. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol. 3. Socioemotional processes* (7th ed., pp. 750–793). Hoboken, NJ: Wiley.

Spenrath, M. A., Clarke, M. E., & Kutcher, S. (2011). The science of brain and biological development: Implications for mental health research, practice and policy. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, *20*(4), 298–304.

Stack, C. B. (1974). *All our kin*. New York, NY: Harper & Row.

Stafford-Brizard, K. B. (2016, July 22). *Nonacademic skills are the necessary foundation for learning*. Education Week. Retrieved from http://www.edweek.org/ew/articles/2016/07/21/nonacademic-skills-are-the-necessary-foundation-for.html.

Steele, C. (2010). *Whistling Vivaldi: And other clues to how stereotypes affect us*. New York, NY: Norton.

Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review*, *28*(1), 78–106.

Stevens, M. C., Skudlarski, P., Pearlson, G. D., & Calhoun, V. D. (2009). Age-related cognitive gains are mediated by the effects of white matter development on brain network integration. *NeuroImage*, *48*(4), 738–746.

Stevenson, J., & Stevenson, H. C. (2013). *Promoting racial literacy in schools: Differences that make a difference*. New York, NY: Teachers College Press.

Suizzo, M., Jackson, K. M., Pahlke, E., Marroquin Y., Blondeau, L., & Martinez, A. (2012). Pathways to achievement: How low-income Mexican-origin parents promote their adolescents through school. *Family Relations*, *61*(4), 533–547. doi:10.1111/j.1741-3729.2012.00727.x

Sutherland, K. S., & Oswald, D. (2005). The relationship between teacher and student behavior in classrooms for students with emotional and behavioral disorders: Transactional processes. *Journal of Child and Family Studies*, *14*, 1–14. doi:10.1007/s10826-005-1106-z

Tarullo, A. R., Obradović, J., & Gunnar, M. R. (2009). Self-control and the developing brain. *Zero to Three*, *29*(3),

31–37. Retrieved from https://web.stanford.edu/group/sparklab/pdf/Tarullo,%20Obradovic,%20Gunnar%20(2009,%200-3)%20Self-Control%20and%20the%20Developing%20Brain.pdf.

Thompson, R. A. (2015). Relationships, regulation, and early development. In R. M. Lerner, & M. E. Lamb (Eds.), *Handbook of child psychology and developmental science, Vol. 3. Socioemotional processes* (pp. 201–246). Hoboken, NJ: Wiley.

Thompson, R. A., & Goodvin, R. (2016). Social support and developmental psychopathology. In D. Cicchetti (Ed.), *Developmental psychopathology: Vol. 4. Risk, resilience, and intervention* (3rd ed., pp. 86–135). Hoboken, NJ: Wiley.

Tolan, P. H. (2016). Community violence exposure and psychopathology. In D. Cicchetti (Ed.), *Developmental psychopathology: Vol. 4. Risk, resilience, and intervention* (3rd ed., pp. 43–86). Hoboken, NJ: Wiley.

Twine, F. W., & Gardener, B. (2013). *Geographies of privilege.* New York, NY: Routledge.

Tyack, D. B. (1974). *The one best system: A history of American urban education* (Vol. 95). Cambridge, MA: Harvard University Press.

U.S. Census Bureau. (2010). *American Community Survey, 2010 1-year estimates: Grandparent characteristics (Table S1001).* Washington, DC: Author.

U.S. Department of Education, Office of Civil Rights. (2014). *Civil rights data collection data snapshot: Early childhood education (Issue Brief No. 2).* Washington, DC: Author.

U.S. Department of Health, & Human Services. (2010). *Healthy People 2020: An opportunity to address societal determinants of health in the United States.* Washington, DC: Author. Retrieved from http://www.healthypeople.gov/2010/hp2020/advisory/SocietalDeterminantsHealth.htm

U.S. Department of Health, & Human Services. (2015). *HHS action plan to reduce racial and ethnic health disparities: Implementation progress report 2011–2014.* Washington, DC: Author. Retrieved from https://www.minorityhealth.hhs.gov/assets/pdf/FINAL_HHS_Action_Plan_Progress_Report_11_2_2015.pdf

U.S. Department of Health, & Human Services. (n.d.). *HHS action plan to reduce racial and ethnic health disparities: A nation free of disparities in health and health care.* Washington, DC: Author. Retrieved from https://minorityhealth.hhs.gov/assets/pdf/hhs/HHS_Plan_complete.pdf

Ursache, A., Blair, C., & Raver, C. C. (2012). The promotion of self-regulation as a means of enhancing school readiness and early achievement in children at risk for school failure: Promotion of self-regulation in school. *Child Development Perspectives*, 6(2), 122–128.

Vaillancourt, T., Hymel, S., & McDougall, P. (2013). The biological underpinnings of peer victimization: Understanding why and how the effects of bullying can last a lifetime. *Theory into Practice*, 52(4), 241–248.

Vandell, D. L., Belsky, J., Burchinal, M., Vandergrift, N., & Steinberg, L. (2010). Do effects of early child care extend to age 15 years? Results from the NICHD study of early child care and youth development. *Child Development*, 81(3), 737–756. doi:10.1111/j.1467-8624.2010.01431.x

Varga, S. M., & Zaff, J. F. (2017). *Defining webs of support: A new framework to advance understanding of relationships and youth development.* Boston, MA: Center for Promise.

Waddington, C. H. (1956). Genetic assimilation of the bithorax phenotype. *Evolution*, 10(1), 1–13.

Waddington, C. H. (with an appendix by H. Kacser). (1957). *The strategy of the genes. A discussion of some aspects of theoretical biology.* London, UK: George Allen & Unwin.

Wadsworth, M. E., Evans, G. W., Grant, K., Carter, J. S., & Duffy, S. (2016). Poverty and the development of psychopathology. In D. Cicchetti (Ed.), *Developmental psychopathology: Vol. 4: Risk, resilience, and intervention* (3rd ed., pp. 136–180). Hoboken, NJ: Wiley.

Wagner, M. M. (1995). Outcomes for youths with serious emotional disturbance in secondary school and early adulthood. *The Future of Children*, 5, 90–112.

Walton, A., & Flouri, E. (2010). Contextual risk, maternal parenting and adolescent externalizing behavior problems: The role of emotion regulation. *Child: Care, Health, and Development*, 36(2), 275–284. doi:10.1111/j.1365-2214.2009.01065.x

Wandersman, A., Alia, K., Cook, B. S., Hsu, L. L., & Ramaswamy, R. (2016). Evidence-based interventions are necessary but not sufficient for achieving outcomes in each setting in a complex world: Empowerment evaluation, getting to outcomes, and demonstrating accountability. *American Journal of Evaluation*, 37(4), 544–561.

West, J., Denton, K., & Reaney, L. M. (2001). *The kindergarten year: Findings from the Early Childhood Longitudinal Study, kindergarten class of 1998-1999* (NCES 2001-023). Washington, DC: U. S. Department of Education, National Center for Education Statistics.

Whelan, C. T., & Maître, B. (2008). Social class variation in risk: A comparative analysis of the dynamics of economic vulnerability. *The British Journal of Sociology*, 59(4), 637–659. doi:10.1111/j.1468-4446.2008.00213.x

Wills, T. A., Murry, V. M., Brody, G. H., Gibbons, F. X., Gerrard, M., Walker, C., & Ainette, M. G. (2007). Ethnic pride and self-control related to protective and risk factors: Test of the theoretical model for the strong African American families program. *Health Psychology*, 26, 50–59. doi:10.1037/0278-6133.26.1.50

Yampolskaya, S., Brown, E. C., & Greenbaum, P. E. (2002). Early pregnancy among adolescent females with serious emotional disturbances: Risk factors and outcomes. *Journal of Emotional and Behavioral Disorders*, 10(2), 108–115.

Yates, T. M., Egeland, L. B., & Sroufe, A. (2003). Rethinking resilience: A developmental process perspective. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 243–266). New York, NY: Cambridge University Press.

Yeager, D. S., Fong, C. J., Lee, H. Y., & Espelage, D. L. (2015). Declines in efficacy of antibullying programs among older adolescents: Theory and a three-level meta-analysis. *Journal of Applied Developmental Psychology*, 37, 36–51.

Yoder, N. (2014). *Self-assessing social and emotional instruction and competencies: A tool for teachers.* Washington, DC: American Institutes for Research, Center on Great

Teachers and Leaders. Retrieved from https://eric.ed.gov/?id=ED553369

Zelazo, P. D. (2015). Executive function: Reflection, iterative reprocessing, complexity, and the developing brain. *Developmental Review*, *38*, 55–68.

Zelazo, P. D., Blair, C. B., & Willoughby, M. T. (2016). *Executive function: Implications for education (NCER 2017–2000)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Research.