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Charting and Changing Developmental Pathways

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With their longitudinal research on the development of prosocial and aggressive behavior, [Hay and colleagues \(2021\)](#) provide a developmental framework for understanding prosocial and aggressive behavior through the early years. By studying these salient social behaviors concurrently, these researchers have begun to create a picture of and markers for how children develop and engage socially in generally positive or negative ways. They have provided a developmental lens to view and understand the nature and rates of development in the early years. For children who are falling behind their same-age peers in positive social engagement, this early stage is optimal for providing support to accelerate development so that these children can catch up by acquiring age-expected competence in social-emotional development.

In my commentary, I focus on implications of the work reported by Hay and colleagues for those who are directly involved with children (e.g., parents, caregivers, childcare providers, and teachers). With the clarity of a developmental lens, it is possible to consider individual children's challenges, strengths, and needs. What prosocial behaviors, typical for their age, have some children not yet developed? Conversely, what aggressive behaviors or orientations have some children developed that may be adaptive in the moment, but dysfunctional for successful relationships later in life? A developmental perspective of the child alone is, however, inadequate. Because children's healthy development depends on healthy relationships, both developmental and relational perspectives are required for a comprehensive understanding of children who are experiencing difficulties. In earlier writings, I have referred to this as a *binocular perspective* (Pepler, 2006). This term highlights the importance of taking into account both the child's development and the quality of the child's relationships with significant others (e.g., peers, parents, siblings, and teachers) and considering how both of these can be shifted.

A relational lens raises complementary questions: Are children's relationships able to provide safety, trust, a sense of being valued and belonging, and opportunities to grow and learn? Do these relationships buffer the impact of life stresses without adding yet more stress? Do the salient members of children's social worlds have the capacity to understand and support optimal development? With a developmental-relational perspective, those involved in children's lives can consider the complex developmental processes within individual children and their relational contexts to inform and effect attuned and timely developmental supports.

Those working day-to-day with children and families are responsible for providing effective developmental experiences and cannot wait for the final robust word from scientists, available after many confirmatory studies. Every day, practitioners engage with children and families who need support in the moment and can respond most effectively with an evidence-informed approach. The research by Hay and colleagues highlights the typical nature and rate of prosocial and antisocial development, and addresses similarities and differences between girls and boys. With an understanding of how and when most children develop these social capacities, it is possible to identify children who are lagging behind their peers. The research also suggests how positive development can be promoted through early intervention for identified children, their parents, and others in their social worlds.

What Does Typical Development Look Like?

From the early months, prosocial and aggressive behaviors comprise part of infants' social repertoire and engagement. These behaviors emerge with the dynamic interplay between children's biological inheritance and their social experiences. In general, prosocial behaviors enable children to engage positively with the world, whereas aggressive behaviors enable children to respond to the world to meet their needs, perhaps in momentarily adaptive ways. During the first 18 months of life, children's prosocial behavior was found to be unrelated to their aggressive behavior, with these two behaviors comprising a single dimension. Hay and colleagues identified this immature pattern as undifferentiated sociability, indicating social engagement at a time when there is a powerful biological need and effort for affiliation and social interactions. When children were a year older, they were not yet consistent, but they were beginning to differentiate patterns of prosocial and aggressive behaviors. By the age of 7, children's prosocial and aggressive styles had consolidated. Children who generally viewed and interacted with others in a positive way were unlikely to interact aggressively. Conversely, children who were persistently aggressive were unlikely, and perhaps unable, to interact in a primarily prosocial manner. Aggressive children may not have fully developed foundational skills for successful social interactions, including verbal language skills, working memory, positive problem solving, and a general concern for others. Instead, these children engaged in an angry-aggressive manner, burdened by a callous, unemotional orientation, which may arise from the interaction of genetics and destabilizing social experiences. Children who tended to engage with their social worlds in an angry-aggressive manner with a lack of concern for others were at risk of following a pathway toward disruptive behavior problems that may later require clinical interventions.

In the first two years of life, girls and boys tended to interact in similar ways. Whereas girls tended to share with peers more often than boys, there were no gender differences in physical aggression up to the age of 2.5 to 3 years. By the age of 7, gender differences began to emerge. Girls were more likely to engage prosocially than were boys, whereas boys were more likely than girls to engage aggressively. Hay and colleagues pointed to developmental mechanisms that may underlie these emerging gender differences, including girls' faster maturation rate and gender role socialization. The stability of aggressive behavior problems was similar for girls and boys from 2.5 to 3 years. By 7 years of age, boys were more likely than girls to exhibit callous-unemotional traits and aggressive behavior problems of clinical concern. Boys (17%) were twice as likely as girls (8%) to be rated as having clinically significant aggressive behavior problems. The gender differences that begin to emerge by age 7 suggest that aggression is especially

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atypical for girls and may leave them out of step with other girls and at risk of co-morbid depression, physical health, and relationship problems (Loeber et al., 2013; Odgers, 2013).

How does an understanding of typical development of prosocial and aggressive behaviors inform those working with children? In a 2003 research summary, Loeber, Farrington, and Petechuk indicated that there are seven years of warning before a boy moves into delinquency. They noted that minor problem behaviors began on average at 7 years of age. The first court contact was at 14.5 years of age. Therefore, there were seven years during which adults involved in boys' lives could have identified those who were experiencing difficulties and worked actively to prevent their journeys along the antisocial pathway to crime. In my remaining comments, I consider developmental indicators for aggressive behavior problems.

What are the Early Indicators of Developmental Problems?

A developmental perspective highlights gaps and disruptions in healthy development. For behavior problems such as aggression, the degree of concern can be assessed with four questions (Pepler & Craig, 2014): How frequently does the child exhibit the behavior problem? How long has the child had the problem? How severe are the child's behaviors? And how pervasive are the behavior problems, for example, does the child have problems in both home and school?

In considering early indicators, a binocular perspective highlights the strengths and difficulties of both the focal child and their salient relationships. For children, it is important to identify what *has not* developed that is impeding positive interactions and what *has* developed that disrupts positive interactions. It is also important to consider whether children's salient relationships are promoting positive engagement and whether children's parents, caregivers, teachers, and peers have the capacity to respond in a safe, attuned, inclusive, and positive way to promote prosocial interactions and to mitigate aggressive interactions.

What has and has not developed? The research by Hay and colleagues raises concern about children with early signs of angry aggression. These children appear to view the world as hostile and may have learned to use aggression to solve social problems and meet their needs. They tend to greet the world in a callous and unemotional way and lag in verbal ability, working memory, social cognition, and emotional understanding. They lack empathy and concern for others' needs. They may not have developed self-regulation and the ability to recognize and understand their own and others' emotions. With my students, I conducted naturalistic observations of 6- to 12-year-old children that highlighted many problems experienced by aggressive children. Similar to the undifferentiated sociability pattern in early childhood, we found that aggressive children were significantly more likely than non-aggressive children to exhibit patterns of high prosocial and high aggressive behavior (Pepler et al., 1998).

Several developmental mechanisms may underlie the developmental lags and behavior problems. Aggressive children may have insecure attachments and lack a sense of calm, safety, and security in relationships. Without developmental supports from nurturing adults, these children may not develop adequate neural pathways and brain structures to enable emotional and behavioral regulation. They may have a limited problem-solving repertoire and hostile

views of others. Over the early years, developmental lags emerge from bi-directional processes in interactions with parents, other caregivers, and peers.

Parents provide the primary developmental context for young children's development. Hay and colleagues accounted for the potential vulnerability of the caregiving environment by assessing sociodemographic risk, which included parents' young age, indications of academic and occupational limitations, and instability of the parents' relationship. Although none of these factors alone necessarily undermines parents' energies and resources, the cumulative effects could constrain parents' capacity to provide stability and nurturance (Bondi et al., 2020). Sociodemographic risk related primarily to ratings of children's uncaring, unemotional, and callous social engagement. Mothers' and fathers' own histories of antisocial behavior were also linked to children's aggressive behavior problems, representing the potential contribution of both genetic and unhealthy relationship processes to children's problems.

Once identified, children and families in vulnerable contexts deserve non-stigmatizing, tailored developmental supports to promote parents' capacity to nurture healthy development. Intervention during the early years offers the best opportunity to ameliorate developmental and relationship challenges and enable children and their families to move onto a healthy pathway.

What Early Interventions Can Help?

A developmental perspective highlights gaps and disruptions in development and provides direction for early interventions to accelerate development so that children can catch up to their peers' socio-emotional level and succeed socially and academically. My collaborators in clinical, educational, and community settings have shown me how a developmental-relational perspective not only guides treatment, but also shapes a warm, welcoming, honoring, unconditionally positive, and relational intervention (Motz et al., 2019). When I began to conduct research embedded in clinical settings during the mid-1980s, the approach to addressing aggressive behavior problems was to focus exclusively on children's social-emotional problems and deficits (Pepler et al., 1991). Since then, interventions have expanded to include parents or even to work exclusively with parents (Dishion et al., 2008; Moretti & Obsuth, 2009).

A binocular perspective guides a consideration of supports required by individual children, as well as supports to ensure that their relationships are safe, warm, trusting, attuned, inclusive, and growth-promoting. I have referred to these two general intervention strategies as *scaffolding* and *social architecture* (Pepler, 2006). With a developmental lens, interventions can focus on the child's development of capacities critical for harmonious interactions. For aggressive children, this might involve scaffolding to promote understanding their own and others' emotions, prosocial problem solving, and self-regulation. Scaffolding interventions for aggressive children have been effective in changing behavior patterns and neurodevelopment. I collaborated with Lewis and colleagues (2008) on a study of neuroactivation changes through the Stop Now and Plan (SNAP®) intervention for aggressive children. Children who improved through treatment showed a decrease in ventral prefrontal cortex activation, which may have mediated the improvements in emotion regulation underlying aggressive interactions.

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Parents may also need interventions that scaffold positive social-emotional development. Parents' histories of antisocial behavior suggest that they too experienced developmental lags, similar to those of their children. The SNAP program has incorporated a concurrent parenting component in which parents are supported to regulate their own emotions and behaviors, promote children's skill development, monitor activities, and discipline positively (Augimeri et al., 2018).

Children develop in the context of relationships; therefore, the social environment needs to be designed to support harmonious relationships. From the first year of life, peers play an important role in social experiences and can contribute to young children's aggression. In earlier work, I coined the term *social architecture* to refer to adults' responsibility to organize children's social experiences to promote positive development and buffer stress (Pepler, 2006). Physical and social spaces can be deliberately organized to maximize inclusion and positive experiences for aggressive children. For example, providing an adequate number of toys, coaching turn-taking and problem-solving, establishing social play groupings, separating aggressive children, and pairing a vulnerable child with prosocial peers. To create effective social experiences, caregiving adults need to be attuned to the needs of individual children and to peer group dynamics.

Charting and Changing Development

The research reported by Hay and colleagues has provided a developmental framework for understanding prosocial and aggressive behavior in the early years. Descriptions of the typical development of prosocial and aggressive behavior provide a benchmark to guide early identification and early intervention for children who lag in being able to engage in positive ways. Biological and neurodevelopmental mechanisms merit future research to identify what constrains children's developmental progress and how neurodevelopment can be accelerated through interventions. In addition to disadvantage, other developmental-relational contexts require consideration as potential mechanisms. Culture and cultural expectations for children must be integrated into assessment and intervention. In any intervention effort, children and parents who have experienced trauma first require attention to safety.

The longitudinal study of the development of prosocial and antisocial behavior reported in the monograph by Hay and colleagues cannot, of course, answer all questions. It is, however, a strong place to start in efforts to bridge developmental science and practice. It provides evidence on what should be expected for typically developing children. The metrics of typical development enable us to identify who is lagging in essential social-emotional capacities. Research that identifies children and families who are struggling can guide intervention strategies to promote positive development and engagement. A developmental-relational perspective calls into question harsh and coercive discipline strategies in homes, childcare settings, and schools because these strategies model and thereby encourage the replication of the very kinds of aggressive behaviors that have been identified as dysfunctional for children and for those with whom they interact. Instead, a developmental-relational perspective calls for a compassionate and attuned understanding of and response to children's aggressive behavior problems and their families' struggles.

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