Encyclopedia on Early Childhood Development

Synthesis on temperament

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How important is it?

Temperament refers to individual characteristics that are assumed to have a biological or genetic basis and that determine the individual's affective, attentional and motor responses in various situations. For example, temperament can affect young children's mood and emotions, how they approach and react to situations, their level of fear, frustration, sadness and discomfort, etc. These responses also play a role in subsequent social interactions and social functioning. A temperamental bias refers to a distinctive profile of feelings and behaviours that originate in the child's biology and appear early in development.

An important dimension of temperament is effortful control, defined by Rothbart as "the ability to inhibit a dominant response to perform a subdominant response." Effortful control includes the abilities to voluntarily manage attention and inhibit or activate behaviour as needed to adapt to the environment, especially when the child does not particularly want to do so.

Temperament's influence on developmental pathways and outcomes has now been recognized, even in areas that have traditionally been seen as almost exclusively the result of socialization, such as conduct problems, empathy and the development of conscience.

What do we know?

Thomas, Chess and colleagues identified nine temperament dimensions: activity level, rhythmicity, approach-withdrawal, adaptability, threshold, intensity, mood, distractibility and attention span-persistence. A revised list reflecting subsequent research includes extraversion or surgency, which is related to positive affect, activity level, impulsivity and risk-taking; negative affectivity, which is related to fear, anger, sadness and discomfort; and effortful control, which is related to attention shifting and focusing, perceptual sensitivity, and inhibitory and activational control. These last three dimensions have been found consistently in parent reports of temperament in early and middle childhood.

Temperament also develops over time. During the first few months of life, individual differences can be observed in attentional orienting, distress proneness, positive affect and approach, and frustration. Late in the first year and beyond, there may be individual differences in fearful inhibition to novel or intense stimuli. Some infants who previously responded rapidly to new objects or people may now approach more slowly, or not approach at all. It is also late in the first year of life that children begin to develop effortful control.

Children's temperaments shape their outcomes, in part by forming the ways that children engage and evoke responses from their environments. Children interpret

their environmental experiences differently depending on their temperaments. For example, anxious and irritable children tend to perceive negative events as more threatening than do children with a lower level of negative emotions.

It is clear that effortful control is linked to positive development, even in the first five years of life. For example, laboratory or parent-report measures of toddlers' and preschoolers' effortful control have been associated with lower levels of problem behaviours. In addition, young children's effortful control has been found to correlate with and predict low levels of negative emotion, highly committed compliance, high levels of social competence, and conscience. Effortful control also plays a role in the responses evoked. As children grow, they are increasingly held responsible for their own behaviour; children who are not well regulated are therefore likely to elicit negative reactions from both peers and adults.

Links have also been identified between temperament and the development of psychopathology. Temperament may heighten responses to stressful events or buffer against risk. Relationships have been found between temperamental fearful inhibition and later anxiety, negative affectivity and depression. Extraversion/surgency and low effortful control have also been associated with the development of behaviour problems.

Yet while there is consensus that temperament is shaped by biological processes, recent research with infant twin pairs has made it clear that children's individual differences are shaped by environmental experiences as well, even during infancy. Different parenting strategies may help to augment or diminish certain aspects of a child's temperament. Beyond the family environment, children's school environment, peer relationships and neighbourhoods can also have a major impact on whether children's early temperaments remain stable and on whether their temperaments lead to good or poor outcomes.

What can be done?

Research on temperament suggests the importance of education to help child-care workers, teachers and parents realize that children's behaviour and emotions are not the sole result of social learning. Instead, children differ from an early age in their reactivity and self-regulation and may follow different pathways to developmental outcomes. Temperament also suggests specific interventions, such as training in attentional control that has been successfully used with four-year-olds and can be adapted to preschool settings. Such training has proven useful for children with ADHD as well, and appears to have general positive effects on children's cognitive processing.

Different parenting strategies appear to work better for children with certain temperaments. This can be explained by the "goodness of fit" theory, as suggested by Thomas and Chess. Children who are aggressive and difficult to manage seem to benefit from a parenting style involving more restrictive control and lower parental negativity. Shy children appear to benefit from being encouraged by parents to explore novel situations and are more likely to remain shy and inhibited if parents are overprotective.

Fearful children tend to develop greater early conscience and do best under gentle parental discipline that promotes internalized conscience. More fearless children

appear to benefit more from maternal responsiveness and their own security of attachment in conscience development.

Individual differences in effortful control, although partly due to heredity, are also associated with the quality of parent-child interactions. Warm, supportive parenting, rather than cold, directive parenting, appears to predict higher levels of effortful control. It is therefore important that parents and other caregivers be encouraged to interact with children in ways that foster the development of effortful control.

Finally, some children pose greater challenges in certain contexts to parents, teachers and other caregivers because of their temperaments. In such cases, caregivers are likely to benefit from additional support and education. For example, caregivers can be helped to avoid negative responses that might naturally be evoked by children with more difficult temperaments.