This chapter explores how children aged from birth to six years old develop an ability to regulate their emotions, including issues that limit this, and discusses factors that increase their long-term resilience to life’s difficulties.

The wellbeing of our children is of paramount importance, and much work is done to try to ensure their health and happiness. However, life can be complicated and difficult, and even parents with the best intentions for their children may struggle to find the right path. Most simply do the best they can, generally using the experience they have of their own upbringing, which reflects varying degrees of capacity and effectiveness.

For a variety of reasons, some children develop a range of problems, some of which relate to their ability to regulate their emotions. While all children exhibit some oppositional behaviour, for some others this is extreme, such as destroying property and aggression towards others. Sometimes children display avoidant and withdrawing behaviours, both clinging to caregivers as well as resisting their approach. Caregivers struggle to manage these children, and in some cases children and their families experience difficulties to the extent that they seek the support of specialist services, including mental health services.

About half of all children’s referrals to mental health services are for oppositional or aggressive behaviours—which can also be
understood as emotion regulation problems (Lewis, Granic, & Lamm 2006). Children who are unable to inhibit their emotional impulses have higher levels of aggression, and these behaviours are often linked to longer term problems, including peer relations and academic progress. In addition, aggressive problems in children often co-occur with anxiety, and children with both these issues are at higher risk for a number of negative outcomes in the longer term (Lewis, et al. 2006).

Definitions

A number of definitions of emotion regulation are found in the literature. Emotions are different from mood, in that mood has a sustained rather than fleeting duration and it does not react to life events and environment (Rossouw 2011). Emotion regulation includes being able to accurately identify your own emotions and cues of others, the ability to express your emotional experience, and the ability to return to a comfortable state of arousal after increased intensity of emotional experience (Kinniburgh, Blaustein, Spinazzola, & Bessel 2005). Emotional regulation has been defined by a number of authors as having a capacity to respond flexibly in a socially acceptable way to different environment demands, allowing for spontaneity as well as being able to inhibit behaviour (Bariola, Hughes, & Gullone 2012; Jungmeen & Cicchetti 2010). In contrast, emotion dysregulation is excessive or constricted emotional reactions, including reduced empathy and inappropriate affective responses for the context (Jungmeen & Cicchetti 2010).

For the purpose of this chapter, emotion regulation will be seen within the context of the system—in terms of children’s relationships with others. It will be defined as the ability to interact with others in a socially acceptable way, which includes the capacity and flexibility to adjust intense emotions and related behaviour responses to the situation.
A definition of resilience comes from how material things are able to take up their original shape again after distortion. The idea of bouncing back has subsequently been linked with how people endure after stress, and how flexible they are in resuming a state of wellbeing again (Hills & Haynes 2012). Resilience requires that the individual is able to identify and negotiate the psychological, social, cultural, and physical resources that sustain their well-being, in a way appropriate to their culture (Barnard, Morland, & Nagy 1999; Ungar 2012). Resilience will be viewed in the context of the system—how the child’s quality of relationships strengthens their capacity to cope with adversity. Children’s capacity to cope with ongoing trauma in their everyday lives will be explored, rather than how they respond to specific traumatic incidents. In addition, resilience is more than being able to survive a difficult experience and return as the same person, but that change and potential growth is likely through the struggle of such adversity.

Theoretical Framework—Factors that Impact Emotion Regulation

To conceptualise a child’s developmental contexts and understand the interplay between individuals, groups and communities, Bronfenbrenner’s 1979 model will be used, which uses a series of concentric rings, with each ring influencing each other ring (DeHart, Sroufe, & Cooper 2004). The centre circle is for the child, with his/her particular biological makeup. Surrounding this is the child’s immediate environment, and depending on age, may includes caregivers, family, physical setting, peers and teachers. Next is the social and economic context, representing the next layer which is slightly more removed but still has an impact on the child, such as the school curriculum and management system or the caregivers work place. Finally, the outer ring represents the cultural context—the beliefs, attitudes, values and guidelines that people in a particular culture share.
While it is acknowledged that the social, economic and cultural contexts are crucial to the child’s emotional development, this chapter focuses on the biological and the immediate environment.

**Biology**

A child’s biological makeup is made up of three essential components, these being the evolutionally heritage shared by all humans, the child’s individual genetic inheritance and the biological results of the interaction between genetics and the environment (DeHart, et al. 2004). In terms of the evolutionally heritage, children’s development usually follows a number of expected stages, recognising that there will be a number of individual differences within a range.
A. Neurological Development

It is crucial to understand the neurodevelopmental perspective of emotional regulation if we are to develop appropriate interventions, as a number of regions of the brain are linked to emotion regulation.

The brain has three core systems that process regulatory functions, these being the brainstem, limbic and cortical systems (Geva & Feldman 2008). These are sometimes referred to as i) the primitive brain—the brain stem which is a sympathetic system with a focus on self-preservation and the fight/flight response; ii) the intermediate/emotional brain—limbic system and emotions; and iii) the rational brain—comprising the neo cortex and intellectual tasks (Helfer 2012). There is an amazing growth in brain size and development during infancy, with the structure of neurons becoming increasingly complex and the interconnections multiplying rapidly in the first 15 months (DeHart, et al. 2004).

Some parts of the brain are fully developed at birth, such as the spinal cord and brainstem, which control reflexes and basic functions—such as breathing, which other parts are functional at birth but develop further during childhood. A child’s nervous system is dependent on its experience and the environment it develops in for all the necessary connections to develop appropriately (Helfer 2012).

A well-functioning brainstem integrated with the limbic system is crucial for the development of emotion regulation capacities (Geva & Feldman 2008). The limbic system, also known as the intermediate or emotional brain, is a collection of structures that are involved in integrating sensory information, memory formation and emotional responses (Rossouw 2011).

One of the structures in the limbic system is the Amygdala, and safety is its main function. It is activated in response to fear—such as facial signs of fear, and can be overactive in children who have experienced trauma, interpreting neutral signals as dangerous
(Davidson, Putnam, & Larson 2000). If there is chronic hyperactivation then anxiety is increased and there are more worried ruminations, which can also lead to unhelpful avoidance strategies and depression (Rossouw 2011).

The limbic system also contains the Hippocampus, the role of which is to map events and put things in context of time and space (Rossouw 2011). This means that fear can be associated with environmental stimuli, meaning that children may live with chronic fear and anxiety. A good sleeping pattern for children is crucial as one of the functions that sleep performs is to process the day’s events, and clear the hippocampus of insignificant details (Rossouw 2011).

The brain has a left and right hemisphere, which performs specific functions. The right hemisphere specialises in non-verbal recognition and emotional memory, reading faces, emotions and assessing the emotional significance of an incident (Rossouw 2011). In contrast, the left hemisphere specialises in verbal work, making meanings, organising information, problem solving and analysis. Interestingly, the left hemisphere also inhibit the activity of the right hemisphere, and it is on this basis that some therapeutic interventions, such as Cognitive Behaviour Therapy, aim to strengthen the left hemisphere as this may reduce intense emotions (Rossouw 2011).

The right hemisphere is very active during children’s early years, and through the process of the senses being stimulated, sensory memory is stored (Australian Childhood Foundation 2010). This hemisphere registers the state of the child’s body as her senses respond to touch, sound, light, warmth, hunger, comfort and rest, and forms templates that represent the most consistent responses from carers. Children are then able to develop an internal sense of predictability about having their needs met. It is from these familiar routines when needs are met, that babies learn to deal with their stress and are more settled; this occurs because memory templates act to reduce the levels of arousal that
they experience as they are exposed to changes in their environment. When routines are disrupted the stress increases, however when they are re-established the memory templates are confirmed and the child settles. Ideally, a relationship develops in which children trust that their needs will be met by the caregiver through these positive experiences (Australian Childhood Foundation 2010).

The Prefrontal Cortex (PFC) is an important part of the cortical system, or “rational” brain, because it is associated with self-control and the ability to inhibit responses, which are crucial to emotion regulation (Lewis, et al. 2006). When considering the ability of children to regulate their emotions, it is helpful to understand that the PFC is not in full operation until someone is in their mid 20s (Rossouw 2011). Another part of the brain that plays a role in the regulation of mood and behaviour, personality, motivation and cognition is the Orbito Frontal Cortex (OFC) (Rossouw 2011). It has been noted by Eslinger et al. (2009) that the importance of the PFC in regards to moral behaviour, rests on its capacity to develop empathy and the ability to adapt socially.

Research indicates that children who display impulsive aggression have a low threshold for emotions, such as anger, distress and agitation, and they are often unable to regulate these negative emotions (Davidson et al. 2000). Children with aggressive behaviour show reduced neural activity related to emotion regulation, and find it more difficult to be flexible in their behaviours (Lewis, et al. 2006).

Children with an intellectual disability may have a lower threshold for the negative comments they are able to tolerate before they become distressed, and therefore will generally struggle more with emotion regulation skills than those who are developing typically (Green & Baker 2011). Research also suggests a link between hyperactivity and neuropsychological abilities, particularly attention and executive function, seen in children as
young as four years old, with children often diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) (Youngwirth, Harvey, Gates, Hashim, & Friedman-Weieneth 2007).

**B. Emotional Development**

Children initially have primary emotions and gradually develop secondary, or self-conscious, emotions over time. The primary emotions that are present from birth in animals and other humans are surprise, interest, joy, anger, sadness, fear and disgust (Santrock 2004). Erickson describes the psychosocial developmental stage during a child’s first year as trust or mistrust, which depends on whether their needs are met by caregivers, and children who develop trust at this stage are likely to see the world as a safe place in the longer term (DeHart, et al. 2004).

Children aged one to three years develop autonomy versus shame and doubt, according to Erickson; this occurs when they start to assert their independence (DeHart, et al. 2004). Caregiver response to this newly developed autonomy is important because if children are too restrained or punished too harshly, they may develop shame and doubt (Santrock 2004). As children’s cognitive abilities develop, self-conscious emotions emerge from about 18 months old, such as empathy, jealousy and embarrassment. From two and a half years, children start to exhibit pride, shame and guilt (Santrock 2004). Children with damage to the OFC fail to develop feelings of shame and guilt later in life, which are crucial emotions to develop for a sense of morals (Helfer 2012).

Theory of mind is the awareness that children develop about their own mental processes and the mental processes of others (Santrock 2004). Children aged two to three years are able to distinguish between positive (e.g. happy) and negative (e.g. sad), however their understanding of how their thoughts or beliefs can influence behaviour is limited, thinking that people are at the mercy of their desires (Santrock 2004). From four to five years, children start to understand that the mind may not always
represent objects or events accurately—that people have false beliefs. Theory of Mind is developed through positive reciprocal interactions with caregivers where children learn to consider what others feel and adjust their behaviour accordingly.

Erickson’s psychosocial stage for children aged three to five years is termed initiative versus guilt. As children are asked to assume more responsibility their initiative increases, however so does a sense of anxiety if they are irresponsible (Santrock 2004). During this stage children will commence preschool, with widening social interactions, started playing in a group, and are learning how to take turns (Hobday & Ollier 1988). Competence with peers increases and friendships endure (DeHart, et al. 2004). Their world continues to expand, they become more self-reliant with both instrumental and emotional areas, their self-control increases—including their ability to tolerate frustration, and their sense of self remains constant (Hobday & Ollier 1988). Their language and cognitive skills improve and they are better able to comprehend simple emotions, such as happy, sad and angry (DeHart, et al. 2004). Teachers play a significant role in children’s development during this stage, and with caregivers can help them discover a sense of their own competence through accomplishment (Santrock 2004).

Finally, the role of children’s temperament in the development of emotional regulation skills is acknowledged, being their behavioural style and characteristic way of responding. The temperament of children may also influence the type of care they receive—for example, children that are easy to interact with may attract positive reinforcement of this, while difficult children are more likely to attract negative feedback, these both being reinforcing loops (Bond & McConkey 2001).

**Immediate Environment**

The immediate environment for young children is their family, particularly their caregivers, and these relationships create the first
opportunities for emotional interaction. As children grow this environment extends to include child care centres, school, teachers and peers.

C. Attachment

When considering how children develop the capacity to regulate their emotions, it is important to understand attachment theory, initially developed by John Bowlby in 1958. Attachment theory changed the way that the bond between caregiver and infant was viewed, emphasising the connection between the two, rather than it being a relationship based purely on survival (Fitton 2012). The caregiver’s sensitivity, responsiveness and attunement to the child in the first 12 months creates a trusting, safe and secure relationship, with the subsequent secure attachment having positive long-term implications (Santrock 2004). This early, enduring and irreplaceable attachment relationship provides an environment that supports mental and emotional growth (Fitton 2012). Secure attachment is a protective system for the child, creating a foundation for positive, mutual interactions between the parent and the child and other long-term relationships (Kochanska et al. 2010).

In contrast, children who do not experience a sensitive and responsive caregiver may develop an insecure attachment type. At a neurobiological level, where a child has developed insecure attachment in the context of basic nurturing needs not being met, this can leave negative neural looping and neuro-chemical reactions in the memory system (Rossouw 2011, p. 29). There are three types of insecure attachment, these being i) avoidant—avoiding the caregiver; ii) resistant—clinging then pushing away; and iii) disorganised—dazed, confused and fearful (Santrock 2004) (see Table 1).

These types of attachment were researched by Ainsworth in 1983, using the “Strange Situation Test”, which observed the nature and quality of the child’s social interaction with their caregiver (Bond & McConkey 2001).
Table 1: Caregiver Attachment Types

<table>
<thead>
<tr>
<th>Caregivers behaviour</th>
<th>Child behaviours</th>
<th>Attachment type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive, responsive.</td>
<td>The child is upset and protests when the caregiver departs, searches for her while away and displays delight on her return.</td>
<td>Secure</td>
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<tr>
<td>Able to repair mismatches in emotional interactions.</td>
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<td></td>
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<tr>
<td>Abusive.</td>
<td>The child displays indifference when the caregiver departs or returns, and is reluctant to cling to her anytime.</td>
<td>Insecure – avoidant (also known as dismissing)</td>
</tr>
<tr>
<td>Limited sensitivity and responsiveness.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insecure – avoidant (also known as dismissing)</td>
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<td></td>
</tr>
<tr>
<td>Neglectful.</td>
<td>The child often clings to the caregiver and show distress when she departs, however do not show delight or are comforted by her return.</td>
<td>Insecure – resistant (also known as preoccupied/ ambivalent)</td>
</tr>
<tr>
<td>Caregivers are inconsistently and unpredictably available. Limited positive interactions with child.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insecure – disorganised (also known as unresolved)</td>
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<td></td>
</tr>
<tr>
<td>Caregivers often look to the child to help with their own emotion regulation and feel helpless or inadequate to protect their child.</td>
<td>The child appears overwhelmed, displaying frozen, confused and fearful behaviours.</td>
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Perspectives on Coping and Resilience
Caregivers who are warm and responsive elicit an eager, willing stance in the child and a mutually responsive, cooperative relationship develops (Kochanska, Barry, Stellern, & O’Bleness 2009). It is within the safety of this relationship that children develop a trust of the caregiver, and subsequently do not generally see any assertion of power as a threat. However, where attachment has not been developed securely, such as when caregivers have a harsh style of control, the relationship usually becomes more difficult after the end of the first year, and the child may enter into a dysfunctional cycle with a caregiver, becoming resentful and oppositional (Kochanska, et al. 2009, p. 1288).

D. Mutual Regulation

The Mutual Regulation Model is the process where the caregiver and child have interactions where they experience times of matching and mismatching emotionally, with the crucial point being the process of repairing mismatch (DiCorcia & Tronick 2011; Tronick & Beegly 2011). Periods of child-caregiver matching is associated with a child’s positive affect and engagement, whereas mismatches are associated with their negative affect and dysregulation.

This model emerged from the Everyday Stress Resilience Hypothesis, formulated by DiCorcia & Tronick (2011), which argues that through the process of being supported while facing daily stressors, children increase their capacity to cope with more extreme stress. This “regulatory resilience” (DiCorcia & Tronick 2011, p. 1594) emphasises the importance of the quality of the child-caregiver relationship, with the process providing a scaffolding experience where the child is able to increasingly learn to regulate their own emotions, through experiencing dysregulation and repair with their caregiver (DiCorcia & Tronick 2011). When children are deprived of this regulatory support, they show deficits in their own emotional regulation, reducing their ongoing resilience in other relationships.
Children need a certain amount of frequent low-intensity maternal negative expression to give them opportunities to learn from the experience and practice their emotion understanding (Green & Baker 2011). However, if the negative expressivity is too high, this increases children’s arousal to the point where they are unable to regulate their own distress and therefore not able to learn about others distress. Sensitive caregivers find a balance between allowing a certain level of discomfort to help children learn to regulate themselves, and stepping in to support when needed (Green & Baker 2011).

The child experiences the world in a certain way, giving meaning to interactions which can shape how they engage with others in the longer term (Tronick & Reck 2009). If a child has a positive experience in one relationship of repairing misses in communication, this can help them feel more effective and trusting that they could experience this reparation after miscommunication or conflict in another relationship (Tronick 2003). Caregivers expression of positive affect with their children has been associated with increased social competence, improved adjustment, emotion understanding, socially acceptable behaviour and higher self-esteem (Green & Baker 2011).

Children find meaning in their key interactions and relationships that influence how they perceive the world and themselves—whether this be positive or negative. The emotional availability of caregivers may limit their capacity to provide appropriate care, influenced by issues such as mental health, significant substance use and conflict in caregiver relationships (Cooper 2009; Davies & Cummings 1994). Children who do not have a sensitive adult to help them learn appropriate ways to interact and repair mismatches do not have a choice but to engage the best they can with caregivers whose interactions may be negative, with frequent mismatches and ineffective processes of repair following a mismatch (Tronick & Beeghly 2011).
E. Trauma

The inability to regulate emotions is one of the most profound consequences of early neglect and abuse (Helfer 2012). Children who are often left at an escalated arousal state without regulation from the caregiver will eventually become traumatised (Helfer 2012; Jungmeen & Cicchetti 2010). Findings from neuroscience show that prolonged exposure to violence can effect emotion development, stress response and learning (Feigelson 2011). Instead of providing a calm and safe environment, caregivers may escalate interactions with their child, such as being punitive or violent, giving in to demands or oscillating between impulsiveness and submission (Weinblatt & Omer 2008, p. 75).

An experience of chronic abuse increases the risk of a range of behavioural, neuropsychological, cognitive, emotional and interpersonal disorders (Becker-Weidman & Hughes 2008). Children who have been exposed to early trauma are at higher risk for developing depression or anxiety as an adult (Heim & Nemeroff 2001). In contrast, when children have secure attachment with a caregiver, they will recover better from trauma than children without access to comfort (Foley 2012).

Research conducted by Jungmeen & Cicchetti (2010) indicate that children who experience multiple subtypes of abuse, particularly if it started early, are more likely to have difficulties with emotional regulation and will show more externalising problems. Further, because of these aggressive and disruptive behaviours, they are more likely to be rejected by their peers, and subsequently have fewer opportunities for positive social interaction. Children who have been physically abused show enhanced perceptual sensitivity to angry facial cues, whereas neglected children have difficulties differentiating between and responding to expressions of emotion. In contrast, children with internalising symptoms do not experience peer rejection in this way, and in fact peer acceptance is a protective effect of emotional regulation (Jungmeen & Cicchetti 2010).
Social and Economic Context

There are a number of protective and risk factors for the development of emotion regulation in the social and economic context, that influences a children’s resilience to trauma. These include: (i) parental and wider family support; (ii) social structures—such as school, church or other community groups; and finally, (iii) economic factors—such as adequate income and housing (Barnard, et al. 1999). As noted previously, while the impact of these systems on the child is significant, these will not all be discussed in this chapter.

The relationship of families with services for children, particularly the therapeutic alliance, is more significant than any other particular intervention for a range of problems (Helfer 2012). Providing an environment where the therapist is able to manage their own negative responses to the child’s negative behaviour, while encouraging positive interactions, may lead to the development of a more positive emotional state for the child (Tronick & Reck 2009). The therapeutic relationship provided by services also provides an important opportunity to support caregivers to improve their own emotion regulation and capacity to attend to their child, as illustrated by a number of the interventions discussed below.

Services and individual therapists may struggle to provide a compassionate and safe environment for caregivers who may often be dysregulated themselves. Caregivers themselves may have had an adverse developmental environment as a child, such as insecure attachment and limited experience of mutual regulation with their own caregivers, and as adults continue to experience frequent unresolved conflict throughout many relationships. Even with the best intentions, these caregivers will struggle to provide an appropriate environment for their children, as they do not have their own skills and experience of mutual regulation.

To be able to offer a compassionate and mutually regulating therapeutic relationship, the therapist requires a full and rich life
of their own, to be able to have the difficult conversations, to listen rather than just waiting to speak, to be flexible to others needs, to be imperfect, to allow themselves not to know everything, to sit in the discomfort of being stuck, to have compassion, and to already be self-nourishing and self-nourished so that they don’t bring their own needs into the relationship (Fuller 1998). While services can play a significant role in a child’s life, the primary relationships in the child’s environment is the caregiver, as this is where the majority of the child’s experience of interaction occurs (Tronick & Reck 2009). The socioeconomic status has a considerable impact, with adverse economic and social factors described as “structural conditions that can create toxic levels of stress in families” making it more difficult for them to provide appropriate care for their children (Feigelson 2011, p. 6). These levels of stress may also exacerbate caregiver mental health problems (Australian Bureau of Statistics 2007), and as noted previously, this may limit a caregiver’s capacity to offer positive mutual regulation experiences. Given the impact of social and economic factors on caregivers, it is vital to include broader social interventions that improve caregiver resources.

Cultural Context

The outer ring in Bronfenbrenner’s model of a child’s environment is the cultural context, the beliefs, attitudes and values that are held in particular cultures. Socialisation is the way that cultures pass onto children the values, beliefs, rules and attitudes, and through this process influence the way that children are encouraged to and expected to regulate their emotions. While families are the primary cultural influence when children are young, peer groups provides significant reinforcement of the values, beliefs and behaviour standards that are a part of this culture (DeHart, et al. 2004). The characteristics of a child’s neighbourhood also have an impact on their development, and where children experience a number of positive role model adults monitoring them, this also is helpful.
Towards a Resilience Framework

In many ways, emotional dysregulation is a developmental problem, where the child has not learnt to manage their emotions because of a lack of nurturing and practice through mutual regulation. Emotional regulation is developed within the context of a responsive caregiver who provides the child with a safe and predictable environment, with opportunities to learn the process of becoming distressed and returning to a stable emotional state (Bariola, et al. 2012; Jungmeen & Cicchetti 2010). The sensitivity and flexibility of the emotional communication between child and caregiver is vital, with recognition of the interplay between biological, psychological and social factors (Lewis, et al. 2006; DeHart, et al. 2004).

The concept of resilience, the ability to bounce back and respond flexibly to situations, is useful to consider in the context of how a child learns emotion regulation. The experience of learning that repair can come from mismatch and miscommunication helps children build resilience. With this comes the understanding that it is not the emotion that causes the problem, but past experience of the emotion, with success of managing intense emotions building skills and breeding confidence for the longer term. Children who have effective emotional regulation skills recognise that repair is possible after conflict in relationships, and have more flexibility, enabling them to manage life struggles better.

A resilience framework is likely to include a number of positive environmental factors, some of which are included in Figure 2.

There are a number of important characteristics in children who demonstrate resilience, including a higher temperamental tolerance to distress, a caregiver who is attuned to their needs, secure attachment, opportunities to gradually practice, ability to learn and social supports (Perry 2006).
For caregivers to be able to provide a responsive and sensitive environment, they need the capacity, information, access to resources and necessary other supports to achieve this (Cubis 2012). As the number of positive factors in a child’s life increase across the range of contexts, so does their likelihood of developing the flexibility to return to a stable emotional state after being distressed, with increased resilience to life’s longer term struggles. The brain has remarkable plasticity, thus it is certainly worth investing time and effort into children with oppositional and aggressive behaviours. Any intervention aiming at increasing a child’s ability to regulate their emotions should recognise these factors, and incorporate a range of strategies to assist children and their families. It is also clear that the social, economic and cultural contexts are important to these issues, and these need to be explored further to build a more comprehensive framework for resilience.
Works Cited


considerations for the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. *Development & Psychopathology*, 21, 687-713.


