

MENDING THE BROKEN TELEPHONE: MOVING FORWARD  
FROM THEORY TO PRACTICE IN SUPPORTING THE  
WELL-BEING OF SENSITIVE CHILDREN

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### Abstract

This project examines current and historical research in developmental psychology and neuroscience to support the idea that nurturing familial and school relationships will create empathic, compassionate and creative future adult citizens and leaders, and thereby a healthy society. I argue that, however helpful they might be, changes to the public school elementary curriculum alone cannot bring about the desired objective. Many years of experimentation with “character training” curricula have amply demonstrated this. This paper culminates in recommendations for the ideal approaches to ensuring the necessary healthy relationships premised on the mentorship of parents, teachers, and other caregivers by child development professionals to support the unfolding of healthy individuals of all temperaments.

*Keywords: High Sensitivity, Empathy, Character, Well-Being, Attunement, Relationship, Attachment*

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Mending The Broken Telephone:  
Moving Forward from Theory to Practice in Supporting the  
Well-Being of Sensitive Children

### 1. Project Objectives

While leading a tour of London's Science Museum, renowned theoretical physicist Stephen Hawking was quoted as stating "the human fault [he] would most like to correct is aggression" (*The Independent*, February 19, 2015). Hawking regards empathy as the antithesis of aggression, a view supported by both science and history. Most of what we know about empathy, defined by the Oxford Dictionary as the ability to understand and share the feelings of others, seems to flow through the levels from theory to application in the form of the "broken telephone" game. As experts pass down their research to the public, its application becomes only a fraction of what the original findings intended—or worse, a "down the line" distortion. Most can understand the meaning of the term empathy, and can accept that we need to cultivate it. Nonetheless, the adult actions required to transmit the original message may be hindered if we pass the definition along through our speech rather than our modelling. According to Australian Psychologist Kim John Payne (2010) when we employ punitive disciplinary methods, in order to teach a lesson, these methods, no matter how well intended set the stage for shame to take hold. By employing them, we are modelling intolerance and encouraging self-blame. When we work with children who are struggling to follow the rules, by actively listening rather than passing judgement, and validating their feelings rather than shutting them down as unallowable because of our own discomfort with them, we

demonstrate what it means to be empathic, and nurture in them the ability to be empathic themselves (Kusuma-Powell & Powell, 2010; Siegel, 2012).

This project examines current and historical research in developmental psychology and neuroscience to support the idea that nurturing familial and school relationships will create empathic, compassionate and creative future adult citizens and leaders, and thereby a healthy society. I argue that, however helpful they might be, changes to the public school elementary curriculum alone cannot bring about the desired objective. Many years of experimentation with “character training” curricula have amply demonstrated this. The ideal approach to ensuring necessary healthy relationships is premised on the mentoring of parents, teachers, and other caregivers by child development professionals with experience and understanding of approaches that best support the unfolding of healthy individuals of all temperaments.

My research on sensitivity, environment and relationships, and the evidence that I have compiled, support my stance. In order to succeed in school, as in life, we need to emphasize three elements: healthy unconditional relationships with caregivers; attunement to the individual children in our care; and provision--to all--of the space to learn and grow from an intrinsic motivational base. My thesis begins with an outline of the historical context for these ideas and approaches. It culminates with suggestions of what is needed for a model primary prevention program in the education system. This program will encourage and sustain the development of healthy behavioural expectations, which underlie emotionally safe relationships at home and in the classroom. The principal objective of the suggested classroom/home interventions is clearly idealistic. Yet, I would argue that it is critical to both individual health and social health objectives



that we foster the capacity for empathy among individuals for the well-being of our world, present and future.

## **2. Literature Review**

### **2.1 Historical Context: Character Education and Moral Training**

The late nineteenth century was a period of profound socioeconomic transformation in Canada and the United States. Industrialization, urbanization, immigration from overseas, and rural outmigration required many adaptations on the part of individuals, families and communities. As families modernized, many of their former functions, such as providing some rudimentary education to children, and caring for the sick and elderly, were transferred to public institutions (Baker & Albanese, 2005). Education was the first and most important of these transfers to the state (Rooke & Schnell, 1983; Ursel, 1993; Axelrod, 1997). By the 1890s, most jurisdictions in Canada and the United States had enacted some measure of compulsory public schooling (Nasaw, 1981; Prentice, 1988). Schools were, in fact, taking on much of the education of the young in the widest sense of that word. The public school elementary classroom offered the ideal opportunity to inculcate the white, English-speaking, Protestant middle-class moral principles that social leaders and educators defined as the ideal basis for character (Wood, 2006). Since this dominant class believed that their own value system would uplift their social inferiors, they contended that schools would transmit their own superior values across class, gender and racial boundaries. The remedy to apparent social anomie was seen to be contained in the *explicit* teaching of values and virtues in public schools (Sutherland, p. 11; Nasaw, 1981, pp. 10-11; McLellan, 1999).

Character education, also classified as moral training, has consequently long been a concern for schools in Great Britain and North America. The Victorians spoke of character as defining all that is honourable and virtuous about the self (Mintz, 1983). Personal, as well as societal objectives were best attained if children could be trained while they were very young and most pliable (Mintz, 2004). The early school systems of the Victorian era were committed to this “policy of civilization” (Milloy, 2006, p. 11). These views gained much support when child welfare advocates around the world optimistically proclaimed the twentieth century to be the century of the child (Keys, 1909; Sutherland, 2000; Hendrick, 2003). In Western Europe and North America, dedicated campaigns of child saving were instigated, involving an emerging caste of professionals in child development, medicine and education, and a variety of voluntary social reform associations that often took direction from the new experts. Their campaigns were focused on the widespread dissemination of new ideas about childhood as a special, vulnerable, and dependant life stage associated with play, schooling, and character formation (Cooter, 1992; Chen, 2005). The Great War that erupted in 1914 emphasized that loyalty, patriotism, individual responsibility, and Christian morality, were all based in personal character (Sutherland, 2000; Fisher, 2012).

In the war’s aftermath, the social and cultural disruptions associated with accelerated change—modernity itself—heightened public anxiety about the “erosion of society” that modernity’s temptations seemed to offer (Courtis, 1931 p. 506). The new morality of the roaring twenties seemed to be loosening traditional behavioural standards, religious adherence, and the authority of parents and elders (Comacchio, 2006). Child experts were especially concerned that modern parents were failing to perform their duty

in rearing children of strong character, who would grow up to become productive and law-abiding citizens (Courtis, 1931). By the 1920s as well, developmental psychology, usually called child study, that had originated in the late nineteenth century, was becoming increasingly sophisticated and more influential in teacher training, curriculum design and individual assessment in the classroom (Koops & Zuckerman, 2003). The measurement of a child's intelligence quotient (IQ) spread rapidly throughout the school system in both the United States and Canada. Modern science would be an increasing influence in framing and disseminating the ideal value system—and therefore shaping the ideal character—that would bring about a better future from the ashes of the Great War (Chudacoff, 1989; Fass, 2000).

In 1924, Drs. Hugh Hartshorne and Mark A. May, psychologists working at the Teachers' College of Columbia University's Institute for Social and Religious Research, became principal investigators in the Institute's Character Education Inquiry. The first large-scale study examining the relationship of values and behaviour, it had three specific objectives: to collect and evaluate all existing Materials on measuring character; to test those found most promising by statistical methods; and, based on this foundation, to design more effective and up to date testing to be used for future research and experimentation (Hartshorne & May, 1927). The survey was based on an unprecedented sample of 8,150 public school and 2,715 private school pupils, mostly in grades 5 through 8, in 23 American communities. The researchers determined that the most important categories for testing were to be social functioning, self-organization or self-control, and experience of God (Hartshorne & May, 1927; Leming, 1993; Kathan, 2015).

Aiming to study moral knowledge through word responses, Hartshorne and May applied simple word tests to these school children, followed by behavioural testing in which children were placed in a variety of situations involving a deliberate choice between right and wrong-doing (Hartshorne & May, 1927). In one test, children were asked to grade their own essays, to determine whether they would inflate their grades given the opportunity (Hartshorne, May, Maller & Shuttleworth, 1, 1930). The study's results were published in three volumes, *Studies in Deceit* (1928), *Studies in Service and Self-Control* (1929), and *Studies in the Organization of Character* (1930). Ultimately, and much to the dismay of innumerable long-time supporters of character education, Hartshorne and May and their team of researchers found that character traits were neither innate nor learned: they simply did not exist as such. Behaviour, they concluded, is merely an outcome of relations with peers, home and environment. Traditional character training methods in home and school were therefore ineffectual: "the prevailing ways of inculcating ideals probably do little good and do some harm" (Hartshorne, May, Maller & Shuttleworth, 1930, 1, p. 413).

Of the many important recommendations that came out of the Character Education Inquiry, the two that would most impact education were that

...the main attention of educators should be placed not so much on devices for teaching honesty or any other 'trait' as on the reconstruction of school practices in such a way as to provide not occasional but consistent and regular opportunities for the successful use by both teachers and pupils of such forms of conduct as make for the common good...

*and that*

...The normal unit for character education is the group or small community, which provides through cooperative discussion and effort, the moral support required for the adventurous discovery and effective

use of ideals in the conduct of affairs ((Hartshorne, May, Maller & Shuttleworth, 1930, 3, pp. 378-9).

Put simply, the study demonstrated that knowing better—being taught what is morally right—does not necessarily translate into doing better in behavioural terms. Yet, if this study raised serious questions about values-based education, removing it from the classroom was hardly a viable option at the time that the results were reported. The destabilizing effects of the Great Depression, on families and the larger society alike, seemed to call for continued character training. The crisis actually reinforced, for many child advocates, educational reformers, and developmental psychologists, that the school had an important—if not the *most* important—role to play in the generational transmission of values (Elder, 1999). By the Second World War, the concept of character training was shifting into that of citizenship training, although good citizens obviously demonstrated good character (Osborne, 2000).

After the war, in the Cold War/Space Age context, new ideas emphasizing the relative, situational and personal elements of morality became prevalent, and the notion of teachers as moral educators was considered outmoded (DeRoche & Williams, 1998). In 1966, however, American psychologist Lawrence Kohlberg linked his cognitive-developmental theory of moral reasoning with moral education in the schools (Kohlberg, 1966; Blatt & Kohlberg, 1975; Power, Higgins & Kohlberg, 1989). At the same time, Louis Raths, Merrill Harmin, and Sidney Simon published *Values and Teaching*, which introduced the concepts and methods of what they classified as values clarification (Raths, Harmin, Simon, 1966). For the next twenty years, the subject area was dominated by Kohlberg's moral dilemma discussion and the values clarification approaches, both

emphasizing that teachers should not moralize, but facilitate and encourage student reasoning while being clear about their own values on particular issues (Higgins, 1980; Leming, 1985; Lockwood, 1978; Lind, 2002). Teachers were to respect “whatever values the students arrived at” (Leming, 1993 p. 64). However, as psychologist James S. Leming’s research (1981-1987) has found,

...even though the moral dilemma approach “works,” it appears to be of little practical utility in influencing students' behavior. Research findings of the values clarification approach are also highly consistent: they show no significant changes in the dependent variables... The research base for the moral and values education curriculums of this period [1960s to 1980] offers little assistance in planning for character education where changes in student behavior is a central objective (Leming, 1993 pp. 64-65).

The school culture of the late 1980s changed once again under neoliberal concerns about student achievement in a global market. This change promoted the standardization of education, as corporate and school lines began to blur (DeRoche & Williams, 1998). Once again, values went by the wayside as life-skills, vocational and citizenship elements of character development returned to central position (Lockwood, 1997). By the early twenty-first century, North American society was once again undergoing intensive change and increasing diversity, as the digital revolution and the globalization that it facilitated broke down national barriers through electronic media and especially the internet (Seiter, 2005). At this point, the question for many was not only *which* values children needed to embrace, but *whose*.

## **2.2 High Sensitivity: The Recent Literature**

Education critics contend that the curriculum mandates of the last several decades have over-focused on testing and academic achievement (Gatto, 2010). As such,

classroom activities have placed a critical need in the well-rounded student on the back shelf: the ability to form healthy relationships and to work cohesively and collaboratively with others, a capacity that is dependent on what Daniel Goleman (1995) classifies as “EQ” or “emotional intelligence.” Rather than being fixed at birth, Goleman suggests that emotional intelligence is cultivated throughout the lifespan, and is the true force underlying a successful life. His research influenced the North American educational system through the application of learning theory to the development of a healthy emotional life. The argument was made that an improved curriculum can help to address emotional/intellectual imbalance by setting social-emotional learning (SEL) goals alongside academic ones (Goleman, 1995).

At the time of its publication, Goleman’s approach was innovative and persuasive. He built upon the concepts of Bowlby, Ainsworth, and the early attachment theorists’ beliefs of the influence of caregiver-child relationships on emotional development. Current neuroscience research further demonstrates, much as did the Character Inquiry Study more than 70 years ago, that good character cannot simply be taught directly, but rather is a natural outcome of interpersonal attunement. Daniel J. Siegel defines attunement as “a quality of integrative relationships in which differences are respected and compassionate connections cultivated” (Siegel, 2013, pp. 34 - 3). Since the time of Siegel’s writing, a number of articles have highlighted the importance of building a culture of empathy in our schools. The most relevant of these for my purposes is “Teaching Empathy: Are We Teaching Content or Students?” (Heick, 2015). Terry Heick, Curriculum Director at *TeachThought*,<sup>1</sup> defines the meaning of “empathy” as it is understood by the majority of researchers on the subject: “an ability to sense other

people's emotions, coupled with the ability to imagine what someone else might be thinking or feeling." Ultimately, empathy constitutes "...the net effect of experiences...students would *learn* to empathize rather than be *taught* to empathize, as a symptom of what they know" (Heick, 2015, p. 1). Just as earlier approaches advised that teachers avoid moralizing, Heick emphasizes that, when the goal is empathy development in children, teachers need to avoid "schoolifying" the subject. Empathy involves nurturing authentic relationships through *attachment*, while educating requires detachment in order to learn a skill (Heick, 2015). Current scientific findings, consequently, counter the notion that empathy and compassion can be taught in a purely cognitive manner. Teachers and students each come with their own temperaments and life histories,<sup>2</sup> which may impact their ability to form relationships in which empathy can develop.

Moreover, the scale of temperament covers a wide range, from highly sensitive, which some have referred to as difficult or spirited, through the slow-to-warm and on the other side of the spectrum, the easy temperament (Chess & Thomas, 1984). Those on the highly sensitive end are commonly referred to as orchids, to indicate the careful cultivation necessary not just for their survival but so that they can flourish and at the other end of the temperament scale are the dandelions, those individuals who appear naturally resilient, able to thrive in both healthy gardens and in sidewalk cracks (Boyce & Kobor, 2015; Letourneau, 2013). High sensitivity can make childhood challenging for children, parents, caregivers and teachers. If adults in the child's life fail to recognize this innate high sensitivity and to take steps to accommodate it, brain development and maturation of the prefrontal cortex--the brain's self-control centre--may be compromised



(Aron & Aron 1997; Baker & Hoerger, 2012; Belsky & Pluess, 2009; Neufeld, 2012).

The sad result is that children may stray from the path of healthy individuation, turning off and tuning out relationships with those who are most able to support their learning and growth (Neufeld, 2008; 2012). Neufeld (2008; 2012) states that in his experience, this state of defendedness can appear, on the surface, as any number of symptoms characteristic of disorders whose diagnosis are increasingly common--Attention Deficit Hyperactivity Disorder (ADHD), Obsessive Compulsive Disorder, Oppositional Defiance Disorder, anxiety, and/or depression. Family systems theorists emphasize that the manifestation of these symptoms may indicate relational and environmental stresses (Nichols & Schwartz, 2005).

For these same reasons, highly sensitive adults, although their very sensitivity often makes them excellent teachers, may become overwhelmed by the busy-ness of an energetic classroom with persistent discipline challenges. Despite their own best intentions, their brains may construct barriers for their own protection, which would make it difficult to connect fully with students. The Ontario Ministry of Education has recently asked teachers to assess and grade elementary school students for the developmental skill known as self-regulation, defined as the ability to self-monitor and control thoughts, emotions and actions (Ontario Ministry of Education, 2010, p. 102). As noted previously, recent neuro-scientific evidence demonstrates that self-regulation is developed through *relationships* over the course of the first twenty-five to thirty years of life (Siegel, 2013). Consequently, the self-regulation grade on the report card may not be a direct reflection of the child's development, but an indication of the state of the child's

relationship with those responsible for his or her care—most notably, of course, parents and teachers.

Multiple authors have argued (Ainsworth, 1967; Bowlby, 1969; Goldberg, 2000; Mooney, 2013; Letourneau, 2014; Klebanov & Travis, 2015; Neufeld & Maté, 2005) the importance of early attachment between mother and child, and how lack of attachment impacts the future mental health and well-being of children. An important 1998 study indicates that toxic stress levels flourish in children who face challenging life circumstances without the unconditional love and acceptance of a reliable caregiver (Felitti et al, 1998).<sup>3</sup> Although some may be inclined to dismiss the notion of such stress and dysfunction in themselves or in their families, research demonstrates their commonality. Shamed-based and punitive disciplinary strategies, such as the seemingly harmless time-out practice in which a child is separated from the adult care-giver and asked to reflect on the poor choices that lead to their behaviour is both developmentally inappropriate, as reflection is a higher-order cognitive skill (Neufeld, 2012) and may alter the parent-child relationship in such a way that toxic stress may be able to take hold, particularly in those with the sensitive trait (Neufeld, 2015). More important, research on the nature of generational trauma suggests that adverse effects are transmitted across generations at the epi-genetic level, affecting the individual's ability to withstand stressful circumstances by turning "on" genes that predispose our sensitivity to the stress and stimuli of our childhood environments (Boyce & Ellis, 2005; Klebanov & Travis, 2015).

New research on brain development and socio-emotional development also demonstrates how punitive discipline, in all forms, disrupts the relationship required for

the development of self-discipline and emotional intelligence; abilities that researchers Letourneau (2014), Klebanov and Travis (2015) have identified as two of the key concerns of contemporary parents. This information has been dispersed throughout developed countries via websites, books and articles<sup>4</sup> for both ordinary readers and interested professionals such as teachers, physicians, social workers and other child-care workers. The questions that arise, therefore, are straightforward: what stands in the way of children and their caregivers forming a relationship from which both healthy self-discipline and authentic empathy can develop? Why might families (and the professionals trained to help children to become healthy, happy and successful adults) veer from the path that the latest scientific research supports? What can we do to ensure that all children have adults in their lives in whom they can trust unconditionally, and who will love them unconditionally? The shared objective should be, above all, to support the natural unfolding of empathy and self-discipline in all children.

What adults often seem to misunderstand, or forget, perhaps due to their own early socialization, is that it is the responsibility of adults, not children's peers, to provide children with a deep sense of belonging (Neufeld & Maté, 2005; Neufeld 2009; Neufeld, 2012). Only in this way can they effectively build the resilience required to weather unpredictable friendships and immature emotional self-regulation (Neufeld and Maté, 2005). This is not to say that there is little or no value in peer friendships, there certainly is, but that when peers displace adults as individuals with authority and their means of belonging, children are at risk simply due to the fickle nature of childhood friendships (Neufeld & Maté, 2005). When emotions are felt deeply, as they are in highly sensitive children and adults (Aron & Aron, 1997), their regulation may become more challenging.

The amygdala, a small, almond shaped nodule in the central region of the brain, is responsible for the primitive fight-or-flight reaction, activating the hypothalamus-pituitary-adrenal (HPA) axis, which releases stress related hormones, such as adrenaline and cortisol into the bloodstream (Ledoux, 1994). For sensitive individuals, this high state of stress more frequently translates into alarm due to their highly calibrated sensory perception (Aron & Aron 1997; Boyce & Ellis, 2005), and may present itself as a behavioural issue (Neufeld, 2015) due to a state referred to as “amygdala hijack” (Ledoux, 1994; Goleman, 1995; Neufeld, 2015). Amygdala hijack, has been identified as the result of the emotions preventing the logical, higher order processing in the brain from occurring, resulting in an emotional reaction that is untempered by thinking and therefore reasoning (Ledoux, 1994; Neufeld, 2015). In addition to being the smoke alarm of the limbic system, Ledoux (1994) suggests that the amygdala also records memories, which instruct repetitive responses when similar cues are recognized over time, in combination with memories of childhood trauma that have been repressed or avoided (Klebanov & Travis, 2015). As a result of this biological record keeping, we may inadvertently set the stage for repeating the cycle in the act of parenting our own children. This likely plays a role in determining why care-givers react emotionally to certain behaviours of the children in their care; their reaction may be the result of the triggering of a distant memory residing outside of consciousness in the amygdala, and therefore they are susceptible to reacted emotionally without being able to logically understanding the reasons behind their reactions (Siegal & Hartzell, 2004). Neufeld (2008; 2010; 2011) believes that a combination of responding to behaviour that is the result of alarm with punitive disciplinary methods, and/or reacting emotionally to the actions of a child in our

care, may hinder the development of self-regulatory growth and adaptation by engaging the stress response in the child, laying the foundation for a perpetuation of the reactive cycle.

### **3. Conceptualizing High Sensitivity**

#### **3.1 Historical Evidence**

In 1899, a short article on the subject of high sensitivity was published in the internationally renowned British medical journal, *The Lancet*. Entitled “States of Over-Excitability, Hypersensitiveness, and Mental Explosiveness in Children,” the article reported on the work of Dr. T.S. Clouston of Edinburgh on what he refers to as morbidly neurotic children.<sup>5</sup> He describes these children as living in a state of hyper-excitability, and exhibiting what he interpreted as being inappropriate reactivity to mental and emotional stimuli. His findings suggested these were symptoms on the fringe of mental illness, which he believed was hereditary in nature. A milk diet with bromides—which are sedative--was suggested as the best form of treatment for afflicted children.<sup>6</sup> This treatment was the first form of medication given to children who were found to be highly responsive to their surroundings, and whom the Victorians saw as fitting into the broad range of neurasthenics who needed medical attention (Mitchinson, 1989).

A century after Clouston’s theory was disseminated through the medical profession, high sensitivity and its correlated over-excitability were becoming, as they continue to be, subjects of international research. Polish psychiatrist and psychologist Kazimierz Dabrowski and Michael M. Piechewski’s (1966) theory of positive disintegration theorized that personality is not an innate, universal trait, but one that the individual shapes by means of psychological tension in childhood and throughout the life

course. Dabrowski and Piechowski came to recognize five categories of what they termed increased psychic excitability: psychomotor, sensual, intellectual, imaginal and emotional. Within each category, they found individuals who processed stimuli differently than the average individual. Dabrowski and Piechowski defined over-excitability as reactions that are above the average in intensity, duration and frequency. They contended that individuals with such intense reactions experience the world through a different, wider aperture, lacking the filters that average individuals have to block out extraneous stimuli (Dabrowski & Piechowski, 1977, p. 30). Unlike Clouston (1899) Dabrowski and Piechowski did not see this over-excitability of the senses as symptoms of mental disorder, rather, they argued that individuals who experienced these over-excitabilities are actually at a developmental advantage, due to their potential for accelerated psychological transformation.<sup>7</sup> While over-excitabilities are believed to be the source of creative genius, they are also associated with an elevated sense of vulnerability, which is believed to lead to a host of externalized and internalized behavioural issues (Grant & Piechowski, 1999; Kitano, 1990; Lewis and Kitano, 1992; Piechowski & Cunningham, 1985).

### **3.2 A Trait by Many Names: High Sensitivity, BSC and Differential Susceptibility**

The research of child psychologist Dr. Elaine Aron since the 1980s uncovered critical details about this difference in sensory sensitivity. Aron began studying the sensory differences when, as a psychology student, it was suggested to her by her advisor that she may be highly sensitive. Wanting to learn everything she could about the meaning behind this suggestion, in order to help herself and others, she started with the

work of early twentieth-century psychoanalyst Carl Jung. In her estimation, Jung's 1913 theory about individuation as the fundamental process of human development supported the notion that those who are innately sensitive are, by predisposition, more affected by adverse childhood experiences (Aron, 2004).

Dr. Aron was not alone in her search to discover the evolutionary relevance of above average sensitivity and its meaning in our daily lives; theories that further support the existence of high sensitivity or over-excitability have been developed by Dr. Jay Belsky (1997), Dr. Michael Pluess (Belsky et al., 2009) and Drs. Boyce and Ellis (2005). Belsky (1997) coined the term differential susceptibility, a theory further developed with Pluess (Belsky et al., 2009) describing the genetic variances that allow for various models of developmental plasticity--the ability to develop and re-develop brain structure and function. These gene variances are believed to have evolved as an evolutionary imperative that works in a manner of hedging bets on the dispersion of genes through generations, based on the uncertainty of future environments (Aron & Aron, 1997; Acevendo, Aron et.al, 2014; Belsky et al., 2009; Boyce & Ellis, 2005). Boyce and Ellis (2005) refer to the trait by a different name, Biological Sensitivity to Context, which reflects their view that those with the trait possesses an increase in capacity to experience negative health effects in adverse conditions, and positive effects in nurturing conditions. Aron (1997), Belsky (1997), Boyce and Ellis (2005) assertion that the correlation of a difficult temperament and high susceptibility to such external influences as shaming child rearing practices and adverse environments, can be explained by the existence of a highly sensitive nervous system that registers stimuli, both positive and negative, more deeply than is usual.

#### 4. Consequences for Highly Sensitive Children

*Imagine this scenario:*

Your son returns home from school in a foul mood. You approach him for a hug and he shrugs you off and stomps off to his bedroom, slamming the door. Within minutes, you hear a banging sound - you see that your child is kicking the door repeatedly. When you ask him to stop, he throws himself on the floor and screams “I hate myself.” This proclamation, from a six-year-old, is alarming. You want to know the cause: your thoughts immediately go to the classic “it happened at school, so it must be the result of bullying” frame of mind.

You sit with your son, and calmly ask why he would feel that way. He responds tearfully, “I’ll just never be good enough!” You think to yourself, “Surely he is being ostracized and shamed at school because his hair is always messy - he hates how the brush feels on his scalp--or because he has worn the same t-shirt three days in a row, it’s the only “comfortable” one he has. He is “unusual.” Why do kids have to be so cruel?!”

You ask him directly “who is bothering you so much that you feel like you don’t belong?” “Who is doing this to you?”

Your son replies, “my teacher.”

Shaken, you think to yourself, how can this be true? Surely your son’s sweet, helpful, enthusiastic teacher is not making him feel this way? You ask him to tell you more.

He sobs and says, “I’ll never be able to get a full day of happy faces! I’ll never be able to--I just can’t be perfect! I will just never be good enough for school - I HATE it, I’m never going back to that place, you just can’t make me!”



You now wonder how it is that you could not see this coming, how could you not have known? Your child's teacher told you that your son has difficulty staying focused during lessons, and that a sticker chart would help to keep him "on track." At a loss for what to do now, you reach out to the teacher, and seek help from the school resource team. They suggest that his extreme reactions must be a sign of "something more," perhaps a psychological disorder. Trusting their knowledge, you make an appointment with your child's doctor, who suggests further assessment. In the end, your child receives a label, a prescription, and an alternative learning plan.

Months down the road, things do not improve; in fact, they have worsened. Your son is moody, raging, impossible to work with at school. You are warned that he will be suspended should he not show marked improvement over the next few days. His behavioural chart is on display by his cubby, so that all of his peers can see it, and when he acts out in class the other children snicker. At recess, he walks around alone, or is made to stand with the teacher on duty should he begin taking his frustrations out on a tree or the school building. Your partner has become fed up with the behaviour too, and is not above sending your child to his room if he comes through the door with his fists flying. You don't know where to go from here. You are consumed by stress and fury; this is not the way you imagined parenting to be. This is not how you imagined the school experience to be.<sup>8</sup>

This is not so much an exercise in imagination as it is the reality that many families experience when they have a sensitive child. Twenty percent of the population the human populace, as well as the 100 other species studied to date have been determined to display the signatures of the trait of high sensitivity, appearing in equal

numbers in males and females (Aron, & Aron 1997). Highly sensitive people, at all ages, are more perceptive of their environment and lack the filters that most people have to mitigate the overload of information that our brains receive every day (Belsky et al., 2009; Belsky & Pluess, 2009; Boyce & Ellis, 2005; Aron & Aron, 1997; Dabrowski & Piechowski, 1966), which means that the environment matters disproportionately to those whom identify as such.

There is much media concern regarding the apparent contemporary epidemics<sup>9</sup> of childhood and adolescent mental health disorders, there seems to be a deficiency in exploring possible associations, however, between high sensitivity and the particular social and cultural conditions affecting today's children and youth. Questioning parents and teachers on the subject of sensitivity often leads to puzzled faces; asking about ADHD, autism and bipolar disorder, or suicide, however, demonstrates that most reasonably-informed individuals have an operating vocabulary and opinions. Ready testimony to this can be found in the numerous blog posts, comments and social media posts that speculate and argue about the validity, occurrence and treatment of these conditions. More serious discussions are found online and in print in respected parenting periodicals such as Canada's *Today's Parent* and its American counterpart, *Parents Magazine*, which is also widely read in Canada. Articles such as "Anxiety Disorders in Children" offer personal anecdotes in combination with simplified advice from professionals. Paula Shuck (2015) author of the aforementioned article, states that her own daughter is more than a worrywart and describes various other cases known to her personally, including that of a young boy she refers to as Jack:

Here's what anxiety can look like. Jack, 10, is a sensitive child attending a French first-language school in Kitchener, Ontario.

Recently, private assessments confirmed he is gifted. Last year, his mom, a teacher, celebrated the final day of school before the summer break. But her son couldn't. He furrowed his brow, started wringing his hands, and hunched his shoulders. When she asked why he wasn't excited about summer, he answered, "In two months I still have to come back."

(Schuck, [www.todayparent.com/blogs](http://www.todayparent.com/blogs), September 29, 2015).

High sensitivity is not, as historically suggested by Dr. Clouston (1899), a mental condition. There is evidence that support the theories that high sensitivity is a trait (Aron & Aron 1997; Aron, 2004; Belsky et al., 2009; Belsky & Pluess, 2009; Boyce & Ellis, 2005), by this definition, symptoms of this trait cannot be outgrown, or disciplined out. High sensitivity cannot be simplified in terms of lacking grit or resilience, although perseverance and adaptation may be nurtured in the highly sensitive given a supportive environment and unconditional positive regard from at least one care-giver (Neufeld, 2012). Elaine and Arthur Aron (1997) have found evidence that distinguishes high sensitivity as a trait of its own when researching the difference between this trait, and related traits such as shyness or introversion. High sensitivity is a normal personality trait that, if truly detrimental, would have been selected out of our genetic code over the lifetime of the species on the earth (Aron & Aron 1997). Yet it remains, because, although it is challenging, research biologists believe this trait to be crucial to the continued evolution of our species (Aron, 2015; Boyce & Ellis, 2005; Belsky et al., 2009; Belsky & Pluess, 2009). As previously stated, researchers commonly discuss children who exhibit high sensitivity as orchid children, after the plant that requires special conditions and care for optimum development and growth (Letourneau, 2013; Boyce & Ellis, 2005; Boyce & Kobor, 2015). It has been found that in supportive environments,

these orchid children, who are often highly intelligent and creative, will flourish: studies show that they outperform their peers in all categories (Letourneau, 2013). Under less than optimal conditions, however, these children are not only difficult to teach and to parent, but are 75% more likely to be diagnosed with a psychological disorder by the age of 25 (Albert, 2015).

Longitudinal studies tracking these children from infancy through adulthood indicate that relationships and environment matter more to those with the sensitive trait than to others (Letourneau, 2013). More recently, certain genetic markers have been identified and implicated in this differential susceptibility (Belsky, et al., 2009), including part of the glucocorticoid receptor gene NR3C1 that influences the activity of a receptor to cortisol, a key stress hormone (Albert, 2015). Other research on highly sensitive individuals study the effects of the pre-natal environment on fetal development of the Hypothalamic-Pituitary-Adrenal Axis (HPA Axis) a complex feedback loop of interactions within the endocrine system (Leis, et al, 2014). The prenatal period prepares the infant for life outside the womb; if the fetus is bathed in stress hormones like cortisol, which has been determined able to cross the placenta, it is hypothesized that the brain develops in a manner that prepares the child for a frightening and unpredictable life outside the womb, thereby setting the stage for high reactivity (Leis, et al, 2014). This, in combination with what we have learned about the amygdala's role in storing memories beyond the reach of our consciousness (Ledoux, 1994), the conclusion may be drawn that a combination of excess cortisol in the amniotic fluid and prenatal memory formation may impact an the rate at which an individual will perceive stressful stimuli in their environment.

Although various degrees of adverse events in childhood have been found to be both common and varied in nature (Felitti et al. 1998) it can be speculated that those who are highly sensitive may process the impacts of these adverse events more deeply, due to the nature of the trait (Aron & Aron, 1997). The work of Vincent Felitti, who, with Robert Anda, is a principal investigator in the on-going Adverse Childhood Experience Studies (ACES), identified a direct link between childhood experience and well-being, both physical and mental, in later life. Their research, outlined in over 79 journal articles, identifies how childhood environments impact brain structure on the molecular level, signaling the higher than average potential for adult organic diseases such as cancer, heart disease and stroke (Dube, Felitti et al., 2003; Felitti, 2009; Brown, et.al., 2009; Felitti et al., 1998, Brown, et al., 2009; Shore, A. 2010). The findings from the ACES studies, in combination with the research on high sensitivity help to demonstrate the necessity of supporting children with the trait for better future outcomes.

#### **4.1 Frustration and Aggression**

When the environment in which we live our daily lives is overwhelming, the brain and nervous system are focused on self-preservation (Klebanov & Travis, 2015; Ledoux, 1994; Neufeld, 2012; Siegel, 2012). By means of this neural protection, sometimes referred to as a defense mechanism or state of defendedness (Neudeld, 2010, 2011, 2015) we lose the ability to interact in a healthy way, and the ability to feel may be compromised. Neufeld (2010, 2011, 2015) theorizes that when we lose the ability to feel, we simply no longer care, and that higher order cognitive processes, like learning, are put on the backburner, superseded by hyper-vigilance; this is commonly seen as a state of

distractedness. These reactions in children may be categorized as symptoms of mental illness or behavioural disorder such as anxiety or attention deficit/hyperactivity disorder (ADHD), as both distraction and inability to concentrate are symptoms commonly associated with both disorders (Firestone & Dozois, 2007) The affected may be sent to the corner, a bedroom, the principal's office, the doctor and the psychiatrist in order to diagnose the ailment and label the sufferer, as well as to treat for this condition or that disorder. In sum, personality traits exhibited by highly-sensitive children are at increased risk of being pathologized. The research on relationships and environment and their impact on sensitive individuals demonstrates how these internalizing and externalizing symptoms signify much deeper issues, namely that temperament is at odds with environment. The research on high sensitivity has identified those who carry this trait as more likely to be the ones who struggle, suffer, and are so labeled (Letourneau, 2013, Obradović, et al., 2010).

Sensitive individuals have been found to stay the course of healthy development in a calm environment where there is a responsive and nurturing caregiver (Letourneau, 2013), this helps to explain why the symptoms of high sensitivity and reactivity may present themselves at the beginning of formal schooling. To begin with, the very nature of high sensitivity/reactivity to surroundings places the highly sensitive person at odds with the very design and structure of the large, brightly-lit, colourful and noisy classrooms that are found in mainstream schools (Aron, 1997). A look at education policy and teacher education, as well as other variables such as the teacher's temperament, their emotional intelligence quotient, and the school's *culture* and *cliMate* - terms used to define "the sum total of behaviours and interactions of all adults and

children, their attitudes and norms--how we *be* in school” and “how well a school provides suitable conditions for learning” (Elias, 2015 p. 2) demonstrate how the neuroscience of emotion need to be the primary focus of future initiatives.

This is evident when we look at the issues surrounding aggression in children, in schools. Today, this is often labeled bullying. Statistics on bullying in Canada can be found online at the Canadian Institutes of Health Research (Government of Canada, 2012).

The Institutes says that:

- *Canada has the 9th highest rate of bullying in the 13-years-olds category on a list of 35 countries*
- *At least 1 in 3 adolescent students in Canada have reported being bullied recently*
- *Among adult Canadians, 38% of males and 30% of females reported having experienced occasional or frequent bullying during their school years*
- *47% of Canadian parents report having a child who has been a victim of bullying*
- *Any participation in bullying increases risk of suicidal ideation in youth*

Retrieved from: <http://www.cihr-irsc.gc.ca/e/45838.html>

In addition to the remarkable statistics regarding bullying among children, is the statistical evidence that shows bullying appears to continue into the adult workforce, with 40% of Canadian workers experiencing bullying on a weekly basis (Lee, et al., 2006).

These statistics demonstrates the overall ineffectiveness of current anti-bullying programs for children and adults alike. Moreover, current research has found that, although there are a number of “anti-bullying” programs available, schools receive little funding or support to see these programs through (Buttenweiser, 2015). Even more importantly, in practice, these programs have shown little evidence of effectiveness: some studies report

that schools with anti-bullying programs appear to experience increased levels of bullying behavior (Buttenweiser, 2015; Neufeld, 2011; Porter, 2013). One of the identifiable issues as to why anti-bullying programs do not work is that students, teachers and parents do not see eye to eye on the issue of personal safety; adults have been found to underestimate the extent of a child's suffering (Buttenweiser, 2015). In other words, teachers and parents may demonstrate a lack of attunement to the feelings of the affected children.

The Canadian bullying statistics presented above (Government of Canada, 2012; Lee et al., 2006) also reinforce the reality that children are always watching adults, and that, as a result, it is up to adults to help them channel their frustrations in healthier ways, one way to achieve this would be modeling the hoped-for behaviour themselves. Canadian psychologist Dr. Gordon Neufeld (2011) regards the bully and the victim as originating from the same place: they are both highly sensitive individuals. The main difference between bullies and victims, according to Neufeld, is that on the one hand, bullies strike out as a result of their brain's defending against vulnerability, while at the same time the hierarchical schema of the alpha instincts--the natural inclination for hierarchy in a group—is maintained. On the other hand, the victims' extreme vulnerability leaves them open to highly-wounding experiences. Boys are more likely than girls to be noticed as aggressors and so labeled due to the nature of their direct or overt aggressive behavior (Jacobson, 2013). Adults may believe that this is due to their biological nature, evolutionary biologists Anne Innis Dagg and Lee Harding (2012) have dismissed this as a myth, and through their research discovered that increased inclination toward aggression and violence is recent in terms of our evolution. Dagg and Harding's



alternative hypothesis is that aggression may be associated with stunted emotional growth, the result of post-traumatic stress, and early abandonment, either in the aggressor's own childhood or that of their father. Given that the circumstances that preclude aggression are amendable given an emotionally supportive environment, we can no longer act as though violence is strictly biological in origin (Dagg & Harding, 2012).

It has also consistently been found that certain parenting styles are correlated with aggression, that the children of authoritarian parents who are rigid and commanding and lack warmth, using control to respond to their child's behavior, and those whose parenting style is neglectful or passive are most likely to have children who may, as a result, feel unsafe, are aggressive towards others (Jacobson, 2013). As Daniel Siegel's research on the importance of caregiver attunement during the early years has shown, these parenting styles impact the brain by what he refers to as "small 't' trauma" (Siegel, 2012, pp. 39 - 45). Thus, they are more likely to create long-lasting impact on social and emotional development due to the persistence of unresolved trauma. Neufeld (2011) suggests that the only way to stop bullying behavior is to soften the heart of the bully in order to re-engage the empathic, care-taking instincts. He indicated that this can only be done from a place of trust that demands strong adult mentoring, especially when it comes to the healthy release of frustration, which has long been understood to be the antecedent of aggression (Dollard & Miller et al., 1939). In Neufeld's (2011) view, it cannot be left to other children to change the behavior of the child labeled as bully, as suggested via programs that advocate for peer by-standers standing up to the aggressor. The responsibility rests with the adults in charge, who must intervene in such a way that the adult will maintain their position and relationship, by looking for issues underlying the

behaviour in the child (Neufeld & Maté, 2005).

Susan Porter, author of *Bully Nation: Why America's Approach to Childhood Aggression is Bad for Everyone* (2013), expands on Neufeld's bully theory by explaining how even the language we use around childhood relational aggression is detrimental to healthy working solutions. Porter (2013) explains that, by using ineffective and damning language to describe situations that arise between children—such as the ubiquitous terms bully, by-stander, and ally, we dismiss the opportunity to help children learn more about the give and take of relationships. Most negative of all, the term bully leaves adults and children in a condition of fear and loathing rather than empathy, a dangerous mindset when working with children. As Porter points out, “to call a seven year old an abusive bully is to have no real idea what abuse is all about, or what seven-year-olds are all about” (Porter, 2013, p. 29). Rather than labeling individuals and their behaviour, we should listen to, and accept, the feelings of those involved, even if they are not the positive feelings we feel most comfortable with. We then need to reflect his or her feelings back to the child, who is not yet able to reflect on their own, as reflection is a higher-order brain capacity that does not begin developing until the early teen years (Johnson, 2012). It is only once this capacity is established that teaching can take place and moral judgment can be assimilated.

This is the underlying challenge in effectively addressing bullying behaviour. School systems commonly utilize a learning-theory approach to discipline – that when we know better, we are able to do better (Porter, 2013). This approach has led adults to believe that children are able to learn from their own behaviour in ways that are beyond their developmental capacity (Porter, 2013). Those who work with children understand

that learning to read, to write and to do arithmetic takes years of development and effort. Yet when it comes to social and emotional regulation, we tend to fall into black and white thinking that relies on children to learn at an expedited rate, in ways that are beyond their developmental capacity due to what appears to be lack of understanding regarding the natural progression of executive skills across the life span (Carriedo et al., 2016; Porter, 2013; Neufeld, 2015). Most unfortunately, we have created policies, such that involve zero-tolerance towards any kind of bullying behavior, that set children up for failure by demanding that they master their emotional and relational challenges upon entry into the school system (Porter, 2013). Research on emotions refutes the idea that our thinking drives our actions (Neufeld, 2015). Farther, the development of our self-regulatory capacity takes much longer than most policy-making takes into account, we are continually developing the ability to regulate our emotions and weigh our decisions in terms of how they will affect ourselves and others until we are into our mid to late twenties (Carriedo, et al., 2016; Porter, 2013; Neufeld, 2015).

The etymology of the word emotion comes from the Latin root *emovere*, which means “to move out, remove or agitate” (Harper, 2010). According to the most accessed dictionary in the world, Dictionary.com, our current definition of emotion is “an affective state of consciousness in which joy, sorrow, fear, hate, or the like is experienced, as distinguished from cognitive and volitional states of consciousness.” Understanding the root, definition and role of emotional development in behaviour, such as aggression, is the key to understanding why we may struggle to change aggressive behaviour through the application of consequences, labeling or stigmatization. Gordon Neufeld (2010) agrees with the hypothesis of aggression put forth by Dollard, Miller and their team of

researchers in 1939, that aggressive behaviour is the result of frustration, from big, deep feelings that result from situations we cannot change nor find a way to adapt to. Neufeld (2010) extends their theory by recognizing that these feelings of frustration can be held on to and build up within an individual until the person feels they are in a safe place to be released. Neufeld (2010) postulates that in an emotionally healthy child, this release will come in the form of tears in the warm arms of a loving caregiver, however; when there is no safe place for tears to be had, he predicts that children will instead act out their frustration aggressively, either towards others, or towards the self in the form of self-harm. Australian psychologist, Dr. Robin Grill, (2005) is in agreement with Neufeld's theory, and adds his own findings about the role of shame in the fueling of aggressive behavior. Grill (2005) says that shame fuels aggression as a result of shame itself being a discharge of frustration; and adding someone else's frustration to our own creates an imbalance, the weight of which is too much for any one person, especially a child, to bear. To properly examine how and why big emotions are repressed until they become explosive, we need to reflect on what our society is willing to accept from children, and what is, in varying measures, forbidden. Do we allow children to cry, or do we try to stifle crying? Do we allow children to be angry, or do we try to repress this normal human emotion?

According to Eileen Johnson, author of *The Children's Bill of Emotional Rights: A Guide to the Needs of Children*, "of all of the rights of childhood, being listened to may be the most important one" (Johnson, 2012, p.1). Johnson found that teachers and parents who take time to listen to the children in their care are, in turn, are listened to by children. Everything we say and do in response to a child's emotions helps them to understand

what is acceptable and what is not. Adult refusal to accept or acknowledge certain emotions does not mean that they disappear. Instead, they are stored in the brain, and manifest in different, often less socially acceptable ways (Neufeld, 2009; 2015). In our fast-paced culture, parents and teachers may become overwhelmed by endless to-do lists and worry that there is little time left to really listen. The paradox is that the more time we spend listening to children, the less time we are required to spend in the vicious cycle of repetition, reprimanding and reinforcing certain behaviours (Johnson, 2012).

#### **4.2 Attention Deficit Hyper Activity Disorder and Giftedness**

According to the Centre for Disease Control and Prevention (2010) there has been a 42% increase in ADHD diagnosis between 2003 and 2004, 2011 and 2012. ADHD is characterized by inattention, impulsivity and hyperactivity in a quantity that is inappropriate for the biological age of the child. (Firestone & Dozois, 2007). The diagnosis was first introduced as Attention Deficit Disorder, with or without Hyperactivity, in the *Diagnostic and Statistical Manual-III* in 1980, earlier versions of the DSM, however, refer to the same condition by other names, for example, *Minimal Brain Dysfunction* in the *DSM-I* in 1963, and *Hyperkinetic Reaction of Childhood* in the second edition published in 1968 (Efron, 2015). As with high sensitivity, the recognition of ADHD-like symptoms in children dates back several hundred years. In 1798, the Scottish physician Sir Alexander Crichton, described people who were easily distracted by extraneous stimuli and had difficulty attending with a “necessary degree of constancy to any one object” (Efron, 2015, p 69). As of the last study by the Centre for Disease Control and Prevention, approximately 6.5 million American children are living with this

diagnosis. Of these children, three and a half million are taking medication, either stimulant medication like Ritalin that works by increasing levels of dopamine – the hormone involved in the reward sequence – or “off-label” psycho-tropics tested for use in adults (Centre for Disease Control and Prevention, 2010). These off-label psychotropic medications have not been tested for safety in use for children, and have been found to have a number of detrimental side effects, such as weight gain, metabolic issues and cardiovascular issues (American Academy of Child and Adolescent Psychiatry, 2011). Stimulants like Ritalin have been found to increase a patient’s capacity to concentrate during boring and repetitive tasks, but there is no substantive evidence that they serve any additional purpose; recent testing has suggested that their long term-benefits are negligible by the end of the first year of use (Parker, et al., 2013).

Most significantly, children who have been diagnosed with ADHD and treated with stimulant medications show no decrease in anti-social behavior as adults (Parker, et al, 2013), although there are likely multiple factors involved in this outcome. Neufeld (2012) suggests that this is likely the result of a persistently immature brain, as the development of the pre-frontal cortex, the area of the brain that completes its development over the course of childhood and into young adulthood may be interfered with by the long-term use of medication. Children are commonly diagnosed with ADHD at the age of six years, although there are increasing diagnoses in children as young as four (CDC, 2014). The change in diagnostic age itself is problematic, as research on ADHD and age at the time of school entry has shown that students who have birthdays in the last two months prior to the entry cut-off point are disproportionately represented among those with the diagnosis, especially when compared to their peers who were born

the first month after the cut-off (Halldner, et al., 2014). Among 4 to 6 year olds, substantial development occurs during an eleven-month span, with those on the older end progressing to more advanced measures of developmental than those at the start of the age group (Halldner, et. al, 2014). As such, children on the younger side of the cohort may simply be immature, rather than dysfunctional; there is clearly a significant difference between these two classifications. Empirical evidence demonstrates that the ability to regulate attention and emotion at school onset begins with attentive child-care providers in the early learning environment, confirming the importance of early child-caregiver attunement (Gialamas et al., 2014). Mislabeling pre-school age children with developmental disorders such as ADHD predictably sets affected children on the unfortunate path of living with a label that can be interpreted as life-long. For such children, the sense that school is a place where they belong may be undermined, which may, in turn, lead them to see their capacity for learning through an entity approach – what is commonly known today as a fixed mindset (Dweck & Leggett, 1988; Dweck, 2012) to their own potential for school and social achievement and ability. Dr. Sami Timini (2005), a British child and adolescent psychiatrist, became alarmed at the increasing number of children, particularly boys, with significant mental health diagnoses. When he asked a colleague for guidelines in defining the difference between physical, emotional and environmental causes of behaviour in order to determine an accurate diagnosis, the response was simply that such guidelines were not possible. Timini regretfully concluded that the medical discipline of psychiatry appeared to be nothing other than “subjective opinion masquerading as fact” (Timini, 2005, p. viii). Although there has been ongoing research on ADHD for the past fifty years, we are

evidently no closer to finding an answer to the puzzle of accurate diagnosis, and are still relying on the limited efficacy of stimulant medications as a mainstay of treatment plans (Efron, 2015).

Even more concerning is how the external manifestations of an over-excited neural network sets the stage for the under-informed—even misinformed-- public, especially parents and teachers, to view any straying from the normative, or average, response to stimuli as symptomatic of disorder. This places highly sensitive children at great risk of being mis-labeled and medicated rather than being given the kind of support and scaffolding that would allow their nervous systems to work to their advantage in the form of advanced development – commonly referred to in our culture as giftedness (Gere, 2009). The symptoms of ADHD and giftedness overlap in multiple areas, such as those concerning impulsiveness, distractedness and hyper-kinetic responses, which are believed to have evolved as a result of their giftedness being misunderstood or mishandled (Lowenstein, L.F. 1984). It has been found that individuals diagnosed with either ADHD or giftedness are more likely to be highly sensitive or to have an exaggerated response to stimuli than the general population. (Rinn & Reynolds, 2012) and that the application of one label over another is dependent on which label is sought after first. The process of diagnosing ADHD has several variables, including the age at which the diagnosis is being sought after, the diagnostic criteria followed, the training of the clinician involved and the part of the world in which the patient resides. ADHD is meant to be a diagnosis of exclusion, a process of elimination and the result of a thorough analysis of all other factors that may influence behaviour, rather than the first answer, as it has all too frequently been admitted to be today, through a diagnostic questionnaire given to parents



and teachers (Efron, 2015), and a 15-minute doctor's appointment (Timimi, 2005). Perhaps most helpful is the view that one diagnosis, ADHD, does not eliminate the possibility of a second, such as learning liability or Giftedness, as it has been found that these diagnosis have ways of masking each other (Hartnett et al., 2004).

### **4.3 The Impact of Digital Technology**

A search of the current literature on the impact of digital technology on children's mental health and development, from television to smart phones and other such devices, will highlight several concerns that are, at this point, predictive in nature as the technology is new and therefore longitudinal studies are still underway. In 2015, Dr. Victoria L. Dunkley, an Integrative Psychiatrist, provided an accessible overview of the current scientific research in her book *Reset Your Child's Brain: A Four Week Plan to End Meltdowns, Raise Grades, and Boost Social Skills by Reversing the Effects of Electronic Screen Time*, for parents and teachers, of this new and expanding research area. Her intention is to summarize current findings, but also to engage care-givers and teachers in looking deeper into the possibility that behavioural challenges may be related to the amount of screen time a child is permitted, and the nature of the screen activity. The result, a new term of reference coined by Dunkley herself: Electronic Screen Syndrome. Although not an official DSM diagnosis at this time, nor a means to dismiss symptoms of actual disorders, Dunkley explains that recent neuro-scientific research has demonstrated how interactive screen technology, in particular, stimulates the amygdala – the primitive fight-or-flight area in the brain, putting children who use the technology in a state of constant stress, whether or not they are aware of it. This over-stimulation of the

amygdala also results in symptoms such as irritability, inability to concentrate, anxiety, depression and various others that cross over into many of the disorders seen to be occurring at elevated frequency in children today, such as ADHD and Bi-Polar Disorder (Dunkley, 2015). Perhaps with the utilization of a screen-fast, as Dunkley suggests, physicians and clinicians would be able to establish a clearer image of their young patients' behavioural symptoms without having the potential influence of screen based over-stimulation to contend with. Based on the research of Drs. Aron (1997, 2004) Belsky and Pluess (2009), we can hypothesize that the effect of digital technology on the highly sensitive population would be exacerbated, as their brains are especially challenged in filtering the large amount of visual stimuli that are produced via screen.

Some parents and educators are committed to the important educational purposes of interactive technology, to the point of worrying that their children will be left behind if their use and exposure are deliberately limited, and that technology is, in effect, a social equalizer. Studies have shown that, to the contrary, the greater accessibility of screen technology at home and school has actually produced a larger gap between the wealthy and the low-income, as those with unlimited access to devices, especially if they also have limited adult direction, supervision and established boundaries, tend to use technology for a disproportionate amount of time, and the content is less likely to be educational in nature. According to a recent survey developed by the Not-For-Profit media watchdog Common Sense Media, American tweens and teens 13 to 18 years of age use screens for entertainment for an average of nine hours a day; note that this is in addition to time used for school work, which is estimated to be an average of thirty minutes (Common Sense Media, 2015). Among children in the zero to eight year old

range, media use has remained steady at an average of 2 hours per day; however, use of interactive technology on handheld devices increased dramatically from 38% in 2011 to 72% in 2013 (Common Sense Media, 2013) and we can only assume that it has continued to rise with the proliferation of devices indicated above in their more recent census. It only makes sense given the inconclusive evidence of its effect on the brain and nervous system to build precautionary boundaries at the onset of usage.

#### **4.4 Parent and Teacher Attitudes and Beliefs**

Childrearing and disciplinary decisions, although to some degree influenced by the parents' own socialization and education, are also based upon beliefs, thoughts and feelings that are activated during the process of caring for children. Providing this care means viewing the actions of a particular child through a filter that can have a positive or negative influence on the adult-child interaction, depending upon whether the filter is itself positive or negative in nature (Grusec, 2006; Hinde, 1979; Loulis & Kuczynski, 1997). A positive filter allows the adult to distance from the actions of the child, allowing response to the child's action to be framed positively or at least in a neutral manner. A negative filter will impact an adult's response to a child's behavior in a maladaptive way (Grusec, 2006; Hinde, 1979; Loulis & Kuczynski, 1997), detrimental to the situation and relationship, and resulting in responses like blaming and shaming. Research on the subject of parental warmth versus rejection and over-controlling childrearing styles has found that children who experience the latter in the relationship with their primary attachment figures are more likely to suffer from poor self-regulation, anxiety and somatic illness (Baker & Hoerger, 2012). This is not a simple blame the parents

statement, as these filters are believed to be passed down through generations at the epigenetic level (Letourneau, 2013). Recognition of this important relationship is crucial in order for effective and beneficial strategies to help adults understand and to cope with the negative filters that have travelled down the generational lineage, and that are detrimental to their own parent-child interaction. Much like the instructions at the start of an airplane journey regarding the use of oxygen, we must help ourselves before we can help the children in our care.

It is evident in looking at the research presented here that as adults responsible for raising children in a time when we need creative and passionate individuals in order to tackle the eminent world challenges such as the sustainability of life on this planet, we need to take a step back and look at the larger context in which a growing number of children are suffering through childhood despite mothers and fathers spending more time with them children now than at any point in recent history (Pew Research Centre, 2013), schools filled with teachers who are well educated (US Department of Education, 2013) and well intentioned, and access to information and technology are ubiquitous (Commonsense Media, 2013; 2015). Discussion of the subjects of morality and empathy, frustration and aggression, ADHD and giftedness, caregiver attachment and attunement, stress, and digital technology help to map the complex relationship between the nature and nurture of highly sensitive individuals. The following section outlines several approaches, informed by the research examined in this review of the literature, that might prove efficacious in addressing the parenting and teaching challenges associated with highly-sensitive children.

## 5. Recommendations

As the research addressed here demonstrates, how we respond to highly sensitive individuals, from pre-natal development through adulthood, is not simply about healthy relationships with children and their own healthy development to adulthood, important as these are. The individual responses of parents, teachers and caregivers, and the collective responses of institutions and society as a whole, have the potential to impact human evolution in the long term. Unsettling as it is to consider, Professor Hawking's concerns ring all too true: will our proclivity to label and medicate, in the name of conformity and an elusive social stability, give rise to a culture of adults with poor coping abilities and a tendency to panic, as manifested in aggression towards the self, in the form of self-harming behaviours and suicide, or aggression towards others, through bullying and violence?

What we can surmise from the extant research is that child-adult relationships *matter substantially*. When children enter the school system, their world opens up to include many new people, peers, teachers, administrators, and a variety of adults in traditional positions of authority. Of these new relationships, the one that has been found to correlate positively with overall school success is the relationship with the teacher in the first year of schooling (Hamre & Pianta, 2001). Having a kindergarten teacher who engages positively with a child, even—and especially—when that child displays low self-regulatory and impulsive behaviour, may protect the child from regarding school as a place where he or she does not, or cannot, belong. A solid foundational relationship between teacher and child sets the stage for school engagement that can last through the primary years and beyond (Portilla, et al., 2014).

This paper has explored the concept of high sensitivity and the critical role that adults play in mitigating the stress that can lead to physical and mental health issues in children, and influence their academic achievement. The role of emotional development has been considered from many perspectives over the last few centuries; in our own century, with a clearer understanding of the brain and its functions, we have surmised that brain development and neurogenesis (the creation of new brain cells) results in large part from healthy relationships between children, their caregivers, and adults in authority (Klebanov & Travis, 2015; Letourneau, 2013; Neufeld, 2012, 2015; Siegel, 2012). If much of this information is now accessible to policy makers, parents, teachers, and the general public, what stands in the way of implementing helpful strategies? The recommendations outlined below recognize two important factors in nurturing self-regulation in children, especially the highly-sensitive. The first is that the traits that distinguish high sensitivity and its related behaviours are often both cross-generational—evident in parents as well as their children, teachers as well as their students. These are best addressed in an intergenerational manner, addressing and supporting the needs of all involved, not just children, because they are also relational. The second, is that, although children demonstrate their agency by acting out, this is a limited agency at best, in that their behaviour is not developmentally within their entire control, and also in that, as children, they have little authority to assert their rights and make their choices without repercussions delivered by adults. Consequently, the majority of these recommendations are directed to adults in regard to their own neurological and emotional make-up and personal biographies and how these affect their interactions with children:

### **5.1 Pre-natal assessment for high sensitivity and ACEs in parents**

Holding on to negative filters, internalized in childhood and brought forth by subconscious memories of our own childhood experiences, can impede responses to children that are warm and guiding (Siegal & Hartzell, 2004). The stigma surrounding mental health may also get in the way of developing emotionally strong parents and teachers, but the importance of preventative care has been demonstrated in multiple studies (Albert, et al., 2015; Baker & Hoerger, 2012; Clarkson Freeman, 2014; Dube et al., 2003; Felitti et al., 1998; Felitti, 2009; Ginsburg, 2009; Leis, et al., 2014) one such example is the research of Pamela A. Clarkson Freeman (2014). Dr. Clarkson Freeman investigated the long term behavioural consequences to children who experienced 3 or more Adverse Childhood Experiences (ACEs), as defined by Dr. Vincent Felitti and his colleagues in 1998, by the age of six and found there to be quadruple the rate of both internalizing and externalizing issues for these children, emphasizing the need for early intervention. There is evidence that an effective approach to anxiety prevention, or at least mitigation, in children whose parents suffer from anxiety, is to treat the family in preventative therapy (Ginsburg, 2009).

Based on this data, I would suggest taking this one step further with the screening of parents-to-be during the prenatal period. The majority of pregnant women in Canada are fortunate to be under the care of a primary physician, obstetrician or midwife during pregnancy. These relationships allow for the exploration of genetic conditions as well as environmental influences that may affect the developing fetus. The use of the Sensitivity Scale designed by Dr. Aron (Appendix A) may prove to be a useful guide when inquiring about the patients' childhood and making note of any responses that may indicate high

sensitivity in the parents. Caring for a sensitive infant, who, due to the depth of emotional intensity may be particularly challenging in regards to sleep, soothing and feeding, would be easier if these challenges could be viewed through a supportive lens, normalized as possible traits characteristics. This may leave parents in an emotionally vulnerable position when caring for a needy infant, to the point of possible marital and familial strife; and begins a journey in which they struggle to believe in their ability to raise a child – which may result in a loss of agency in their family, and in turn, the adoption of a passive parenting style with its associated issues. Should the mother and/or her partner present with high sensitivity, as well as a history of a challenging childhood, which can be established through the use of Dr. Feletti and his team’s Adverse Childhood Experiences Scale (Appendix B), the doctor or other caregiver could refer the parents for pre-emptive therapy to help them deal with the emotions that may be triggered when caring for a highly sensitive infant and child.

Accessible peer-to-peer support groups for parents with leaders who are well versed in attachment, child development and the neuroscience of attunement are also essential for new parents, to help normalize feelings and concerns that do not necessarily warrant a doctor’s visit. While there are excellent groups already in existence, such as those associated with Le Leche League organization, these groups may be interpreted by some to be domineered by ‘lactivists’ and thus exclusive. Dr. Gordon’s Neufeld’s parenting classes are both accessible, through online groups and through facilitators across the world, and are an excellent resource for parents, grandparents, care-givers, teachers and professionals, providing an opportunity for sharing experiences within a community of caring individuals of varying age and background, both and personal and



professional. In the future, support groups dedicated to the families of sensitive children would be beneficial in supporting parents, caregivers and teachers with their own lived experience of being sensitive, as well as in supporting the healthy development of the sensitive children in their care.

## **5.2 Informing and Working with Teachers**

As we do not live in an ideal world where all children come from homes that provide for the development of secure attachment with a caregiver, the next necessary challenge is to normalize feelings and emotions for teachers. This should be initiated during their teacher training and continued on the job, in order to provide them with the support that they need to respond effectively to all their students, with a particular eye to identifying and understanding the highly sensitive ones. The results of a study that suggest the relationship between the way a teacher was disciplined as a child, and the way that they, in turn, discipline their students indicates that teacher candidates would benefit from investigating this relationship during the teacher training period (Kaplan, 1992). A child spends an average of 6 hours per day, five days per week at school, the amount of time that a child spends with a teacher demonstrates the importance of the strength of this relationship.

Preventative interventions for teachers would look similar to the suggested strategies for parents, as highly sensitive children have been found to easily take on the feelings of those around them as if they are their own (Aron, 2004); if their teacher is having a bad day, a sensitive child's behaviour may mirror the teacher's condition. As Aron (2015) jokingly suggested in her film "Sensitive: The Movie," when disciplining a

sensitive child one should instruct the child next to them, and then the sensitive child will get the idea and correct their own behaviour. This notion is one that sensitive individuals and those who recognize their children as highly sensitive will grasp, while also acknowledging that taking on the emotional climate of a room with 20 to 30 eight-year-olds is physically and emotionally exhausting.

Since we have learned that sensitive children take in more of the information in their environment than the average child (Aron 1997, 2004; Belsky & Pluess, 2009) to best support highly sensitive individuals at school, as well as all children and teachers, we need to create a culture and climate that is free of visual and auditory chaos, which can overwhelm students, and be experienced as emotionally threatening. This is a daunting task, but practical applications are relatively straightforward. Some ways in which sensitive children can be supported in the classroom are to sit close to a window, and be permitted to gaze out intermittently, limit decorative paraphernalia to one wall also helps to create a calming environment, and abstain from hanging décor or art projects from the ceiling. Classrooms can get loud, and auditoriums even louder; creating a quieter space for children to retreat to on their own terms, and allowing them to opt out of whole-school gatherings without consequence would demonstrate compassion for children of all temperaments.

Studies have shown that children can help themselves regulate sensory input by engaging the vestibular system (Zimmer & Desch, 2012). Having tools such as a mini trampoline, skipping rope, balance board or spinning chair can help over-reactive children return to a state of sensory equilibrium independently, thus gaining a sense of agency and in turn the development of healthy coping skills. A qualified and supportive

therapist who has particular expertise in working with highly sensitive children, whether provided by the school or otherwise referred, can support both child and parents, and will often most effectively begin with the parents. Creating a plan in advance with a sensitive student to work elsewhere during free time, such as the office or the library – out of their own accord – and to have a safe place to settle down after an over stimulating situation, will help to alleviate possible feelings of shame, allow for less disruption, and may in turn increase focus and productivity. For a highly sensitive child, the classroom can be a tremendously stressful environment, and we have learned that a stressed brain's job is self-preservation, not learning (Ledoux, 2004). When children are not learning, they can easily become bored and frustrated and might act out in less than acceptable ways that disrupt the flow and learning of not only themselves but also of those around them. Adapting the school environment to benefit sensitive children may promote emotional balance and consequently deeper learning for all students.

Most important of these recommendations is setting the stage for emotional safety. This starts with the school leader, the principal. It is the principal's responsibility to hold the best interests of teachers, staff and students above all other concerns. This means creating relationships, and an overall cliMate, free from arbitrary criticism and strengthened by active listening. Just as teachers are models for their students, the principal is the model for teachers under their direction. When a principal sets the stage for emotionally safe relationships with school employees, free from shaming and control based on hierarchy and mistrust, teachers and associated staff are enabled to pass on the benefits to their students. According to Australian psychologist Dr. Robin Grille (2005), shaming is the antithesis of empathy. Grille (2005) suggests that feelings of shame are

covered up by attitudes of contempt, superiority, domineering or bullying – none of which belong in healthy relationships. As suggested by Dr. Eileen Johnson (2012), the best way to respond to an incident – whether between adults or children or adults and children--is to listen fully, accept the feelings of those involved, and reflect back those feelings to them in order to demonstrate understanding. For children, making time and space for the tears that may follow is just as important. Neufeld's (2009) paradigm incorporates the findings that the release of tears of frustration lead to neurogenesis – the creation of new pathways in the brain, a necessary pre-cursor to adaptation, which is a goal of the Ontario Character Education Curriculum (2008). When we swoop in to solve problems for children, either to make everything better or to teach someone a lesson by imposing punitive discipline, we rob them of the opportunity to foster real and advantageous neuro-development (Neufeld, 2009).

### **5.3 Supporting Parent-Teacher Relationships**

Parent-child and teacher-child hierarchical relationships are not the only relationships we need to keep in mind when looking for directions to pursue in supporting current and future generations of children. Just as significant is the relationship between parents and teachers, as it has been found that this relationship plays a mediating role in a child's externalizing behaviors at school (Kim, 2013). It is important for a child to see that the parent and teacher are on the same side in supporting the child in their healthy development, and that they rely on their mutual support to fulfill this goal. This is important for all children, but sensitive children, who are by nature especially perceptive to the emotions of others, need to feel confident that the people charged with their care

are working together for their benefit. As with parent-child interactions, this goal will be impacted by the parents' general views on school. If the parent recalls (or even retains implicit memories) of school as a difficult period of life, and of unsupportive or punitive teachers, they may be more likely to have ambivalent, or possibly negative relationship with their child's teacher(s). The parent-teacher relationship may then prompt an increase in the child's externalizing behaviours at school. The reverse should also be considered, in that when a teacher views a child who exhibits externalizing behaviours, they may be inclined to believe that this is the direct result of poor parenting. However, as the research indicates, many children react to stress by acting out their emotions, and this may be just as likely to happen at school as it is to happen at home. It is therefore vital that the teacher and parent(s) respond to one another as they would, ideally, respond to the child, considering their best intentions, actively listening to and validating their concerns, and working as a teacher-parent team to help the child whom both want to see succeed.

Finally, while many of the recommendations focus on adult education and therapeutic intervention there will be times when more is needed in order for the adults involved to be able to regulate their own emotions. Neurofeedback, also known as neuro-therapy or neuro-biofeedback is a type of biofeedback that uses real time displays of brain activity, more commonly via electroencephalography (EEG) to teach self-regulation of brain function (Thompson & Thompson, 2003). It is a relatively new treatment method, which has thus far shown to be successful in re-training the brain; a growing body of empirical research is becoming available to support the claims of its practitioners (Larson, et al. 2010; Thompson & Thompson, 2003).

#### 5.4 Rethinking Zero-Tolerance Policies

When we look back at the history of, and also contemporary guidelines for, the development of character in children, we find varying iterations of the same premises: that it is the duty of adults to impart and inculcate character through direct instruction, in the school and in the home, as the explicit and intentional cultivation of whatever culturally and historically specific attributes are viewed as universal ideal traits (Glaze, et al. 2008). As usual, these are not so much universal or normative as they are defined within the parameters of certain class, gender, race and age-defined constructs. As has been discussed here, recent studies demonstrate that the best way to develop the behavior congruent with the boundaries of good character today is through attuned relationships and modeling and scaffolding of the desired behaviors rather than direct instruction. According to neuroscientist Dr. Dan Siegel (2012), interpersonal connections shape neural connections, and vice versa. The brain and the mind are affected by relationships, and relationships are affected by the brain and the mind, in what Siegel refers to as our “triangle of integration” (Siegel, 2012, p. 34 - 43). He defines integration within relationships as “each person honor[ing] personal differences and then cultivat[ing] compassionate connections in the form of caring, respectful communication” (Siegel, 2012, pp. 34 - 43).

What this means, in essence, is that when responding to the behavior of others, we need to try to imagine what they are feeling rather than classifying their behaviour by means of our own feelings about it. In *Finding Common Ground, Character Development in Ontario Schools, K-12*, last updated in June 2008, the Ontario Ministry of Education specifically defines character education as being “about the development of

critical and analytical thinking...not about punishment. It is about self-discipline.

Behavioural consequences are addressed in Codes of Conduct...” (Ontario Ministry of Education, 2008, p. 5). The view that character development and the implementation of consequences for certain behaviours are separate entities may be the point at which the development of the healthy school culture and cliMate that we desire has become stuck.

Moving towards a new model that supports a healthy school cliMate will involve redefining behavioural consequences from those laid out in zero-tolerance policies, which fifteen years of studies have indicated are ineffectual at curbing the inappropriate behaviour of those they intend to teach. Consequences such as out-of-school suspension and expulsion have been found to put at-risk children, those from lower socioeconomic classes, and often racial minorities, at increased risk of self-endangerment and even criminal involvement during their often-unsupervised time away from school (Cueller & Markowitz, 2015). Paradoxically, the proposed remedy for anti-social behaviour in school actually compromises their potential for positive educational outcomes, including school completion (American Academy of Pediatrics, 2013). In the United States, this all-too-common state of affairs has been called the “school to prison pipeline” (Cueller & Markowitz, 2015 p. 98) Most pertinent to this paper is the role that zero-tolerance policies, especially the out-of-school suspension, often undermine the child’s sense of belonging in school. The result is often a greater intensity of conflict with adults upon return to school (Skiba, et al., 2006), which is not what those at most risk for dropping out need most; when asked, their response is instead that they seek more understanding, flexibility and outreach in a timely manner from their teachers (Ontario Ministry of Education, 2008).

While zero-tolerance for weapons violations is entirely advisable, this conduct model is used across the board for behaviour deemed bullying. A disturbing trend of application has seen children who are developmentally immature being disciplined for poor judgment—much the same as poor character—although their lapses in judgment are developmentally normative and supported by current neurodevelopment studies (Skiba, et al., 2006). Alternatives to zero-tolerance policies need to be devised and implemented if the intact and healthy adult-child relationships essential for positive long-term outcomes are to be nurtured and sustained (Letourneau, 2013; Neufeld, 2009; Porter, 2013). An alternative is being explored on a small scale by the introduction of talking circles or Restorative Justice programs, using a problem solving approach and non-blaming language to mend relationships (Hamilton-Wentworth District School Board, 2012). The Hamilton-Wentworth Public and Catholic school boards have integrated this practice into their discipline methods and have reported a positive response from those who have taken part in the pilot programs thus far (Hamilton-Wentworth District School Board, 2012).

The concept of maintaining communication is helpful; however, educators should proceed with caution in the implementation of a program that emphasizes reflection from students who have not yet reached this stage of development, which is just in the beginning stages in the teen years (Porter, 2013). Neufeld (2012) has suggested that a good way to assist in the development of the reflective process and to foster the tempering of feelings is to draw out the ambivalence in the child with scaffolding discussions in the form of on the one hand/ on the other hand statements in order to assist in the mixing of feelings that leads to better decision making in the future. Immature



brains think in terms of black and white and as adults we need to support the development of the grey area.

When feelings are intense, as they are for those with the sensitive trait, and the capacity for self-control is still immature, we also need to find a means for the safe and judgment-free discharge of these big feelings (Neufeld, 2012). In October 2007, Susan Dafoe-Abbey, Registered Marriage and Family Therapist and Neufeld Faculty Intern, and psychologist Dr. David Abbey, undertook a research project at an elementary school in Oshawa, Ontario, at the request of the principal (Abbey & Dafoe-Abbey, 2008). The project was conducted under the supervision of the Neufeld Institute. The principal was familiar with the Neufeld Paradigm and had taken the Intensive Course with Neufeld at his Institute in British Columbia. She wanted to bring her staff alongside by introducing the paradigm to them in the form of home study. Susan Dafoe-Abbey was asked to facilitate the course, and with Dr. Abbey, developed a Pilot Project Evaluation to find evidence for or against the application of the Neufeld Paradigm in a school setting. Eight teaching staff members viewed the 22 hour Neufeld lecture series “Intensive 1: Making Sense of Kids.” They then met with the research team personally, and participated in telephone interviews and a web-based survey.

The project results indicated that teachers felt their participation made them more competent in connecting with their students by encouraging them to believe that they are their students’ most supportive allies in the school setting, more important than peer relationships (Abbey & Dafoe-Abbey, 2008). The teachers involved learned to look beneath behaviours to work more effectively with frustrated students in ways that would facilitate neuro-development. Upon completing the course, teachers felt that they were

better able to recognize their own developmental history and how it affects the ways in which they view and interact with their students, allowing them to understand their students' emotional states, and at the same time, to be more willing to work with their feelings (Abbey & Dafoe-Abbey, 2008). The study's positive outcome can also be attributed to the fact the participant teachers were already in a supportive teaching environment, having a principal who understood and embraced the Neufeld Paradigm put them at an advantage, as they were able to work with a mentor and role model every day. Should this study be repeated, the authors felt that using the context as a variable would be helpful to demonstrate the distinguishing effects of having the principal leader join their staff to learn the developmental paradigm alongside them, or having the teachers learn the paradigm prior to the principal. In the end, the study supported the Neufeld principle that rethinking supervision in school might be the simplest and most applicable resolution to conduct issues because the increased presence of available and understanding adults is known to be an effective preventative measure.

### **5.5 Moderating Media and Technology**

The role of media and technology in the life of a 21<sup>st</sup> century child has polarized observers. On the one hand, there are those like Cris Rowan, Canadian Occupational Therapist and founder of *Zone'd In* ([www.zonein.ca](http://www.zonein.ca)) who would prefer to keep technology out of the hands of babes, as indicated in her widely circulated article in the Huffington Post entitled *10 Reasons Why Handheld Devices Should be Banned for Children Under the Age of 12* (Rowan, 2015). Techno-proponents, like author and journalist Jordan Shapiro, believe that *teachers should be clamoring for ed-tech* (Shapiro,

2015) gadgets and devices, in the form of applications, smart boards and Skype for classrooms constitute solutions to any number of education needs for the young. Perhaps an intermediary position, as in many complicated issues, is the best approach. Where does technology fit in the healthy home and classroom?

First, boundaries are necessary to keep children safe, and these are boundaries that only adults are positioned to make and enforce. There seems to be a constant stream of media stories about older children and adolescents making poor decisions about sharing personal information, photographs and video online, and about accessing Material that is violent and sexually inappropriate, and subversive (terrorist) while on school grounds and during school hours (Outhit, 2015; Rutledge, 2015). Many public schools now have a bring your own device program, which allows students to bring a handheld digital device, usually an iPod, iPhone, or Nintendo game player, in order to participate in updating classroom blogs, take photos, tweet, and engage with educational applications (Upper Grand District School Board, 2015). These devices are welcomed into the classroom with the students, but they are required to be kept in the students' desks during regular classroom time, to be taken out and used only on the teachers' request. Having worked at a school that employs this approach, I have seen first-hand the difficulties of monitoring usage. The devices are used outside of their recommended allotted times and without regard to their recommended applications, resulting in a need for frequent disciplinary action on the part of the adult in charge. Confiscating the devices of perpetrating students to set an example for others is a prime example of doing to discipline, with all the negative repercussions this implies for the recipient. As adults struggle with ignoring the pings of updates and text messages on their own devices (Worthen, 2012), we are setting

up students for failure when we put the distraction in their desks while expecting them to be stronger-willed, at their young ages, than many adults can be.

Second, the notion that the parents, teachers and other adults of the Gen X and Y cohorts are digital immigrants and our children are digital natives has generally been accepted with naiveté. We may not be as quick as our children, but we are still their models and have the developed brain capacity necessary to make reasoned choices. As teachers and parents, it is up to us to model healthy use and application of technology, support open discussions about these, advise about dangers, both in terms of other online users and also regarding the possible effects for health, and to scaffold critical thinking about the marketing messages that proliferate during our online involvement. Finally, we need to remember, and make time for face – to –face connection, active play for its own sake, and rest from too much stimulating play in the development of brain, mind and body.

## **5.6 Discretionary Use of Labels**

UltiMately, the importance of using care and discretion in discussing children's varying traits and possible disorders cannot be over-emphasized. Labeling children with a disorder is often seen to help them move beyond stigma, but, for the child, such labels may be more undermining than useful (Lauchlan & Boyle, 2007). Because children are in a constant state of growth, change and development, applying labels without hesitancy may move us away from viewing them as full of potential, and frames our understanding of their specific needs on the basis of their medical diagnosis and its purported outcomes. This is not to deny the existence of very real developmental disorders, nor the need for

assessment if their behaviour or other symptoms raise questions. The label, should it be required, even if only to ensure support for the child and caregivers, may be best kept to the concerned adults, and used to support the child's growth, this is just as much the case for ADHD as it is for giftedness.

The current scientific findings support the processes of neurogenesis and neuroplasticity (the ability of the brain to change itself or “re-wire”) (Belsky et al., 2009). As such, labels largely serve to limit children by means of subjective adult assessments and opinions. The most important focus is the child's needs and how we can, as adults and as a society, design effective supports so that children will develop on a trajectory that culminates in a healthy individual.

## **6. Conclusions and Suggestions for Future Study**

Emotionally intelligent teachers who understand the importance of cultivating healthy relationships with students, parents and co-workers impact other's lives in a long-lasting, positive way (Neufeld, 2008; Powell & Kusuma-Powell, 2010). Also evident is that early childcare (Gialamas, et.al., 2014) and kindergarten are crucial years in supporting the formulation of a child's sense of belonging in school (Hamre & Pianta, 2001; Portilla et al., 2014). We know that stress itself may not be the cause of malady, but stress unmitigated by support may be (Letourneau, 2013). Thanks to pioneering research, we also know that there is variability in the filtering of the senses, so that the less we are able to filter, the more we suffer from adverse environments, and the more we benefit from nurturing support (Aron, 2015; Belsky, et al., 2009; Boyce, 2005; Daborwski & Piechowski, 1977).

This paper has examined the current and historical research in developmental psychology and neuroscience to support the idea that nurturing familial and school relationships will support the development of empathic, compassionate and creative individuals, citizens and leaders. An emphasis on the mentorship of parents, teachers, and other caregivers by child development professionals who focus on supporting the particular needs of the highly sensitive, has been supported by the research presented herein.

Questions that warrant further research surround the efficacy of the pre-emptive therapeutic interventions suggested. What would happen if we expanded our lens to view behaviour not only within the familial or school context, but also along with the role and impact of high sensitivity? More exploration of the gendered nature of high sensitivity would also be helpful, since boys are, interestingly, often labelled, with behavioural disorders, how is this the case when sensitivity has historically been constructed as a feminine trait? Does high sensitivity manifest differently in girls than in boys? Does their usually faster developmental trajectory mitigate high sensitivity in girls? Does puberty have any effect on high sensitivity in boys or girls? As we look for more diagnoses, defining traits and labels to explain the behaviour of children, we should not ignore the context in which they are living and growing. An increasing number of children being diagnosed as disordered may point to a culture that is both unsustainable and at odds with natural development. If we try to swim against the current of development, we are not only placing ourselves in frustrating circumstances, but we may also be creating the adverse experiences that will undermine the mental health and well-being of future generations.

## Endnotes

- <sup>1</sup> This is an interactive teaching and learning website by and for teachers; [www.teachthought.com](http://www.teachthought.com).
- <sup>2</sup> Similar to [teachthought.com](http://www.teachthought.com), the American teacher resource website, [www.edutopia.org](http://www.edutopia.org), funded by the George Lucas Educational Foundation, features blog and opinion pieces for teachers and parents to join in the discussion of what works in contemporary classrooms and where we are heading.
- <sup>3</sup> Originally published in the *American Journal of Preventive Medicine*, this study was republished in a shortened and less specialized form in the *Adverse Childhood Experiences* (“ACES”) series of studies.
- <sup>4</sup> Popular parenting website where this information can be accessed are:  
[www.compassionatesolutions.ca](http://www.compassionatesolutions.ca)  
[www.attachmentparenting.org](http://www.attachmentparenting.org)  
[www.livesinthebalance.org](http://www.livesinthebalance.org)  
[www.todaysparent.com](http://www.todaysparent.com)  
[www.parentscanada.com](http://www.parentscanada.com)  
[www.canadianfamily.ca](http://www.canadianfamily.ca)  
[www.theglobeandmail.com/life/parenting](http://www.theglobeandmail.com/life/parenting)

Some popular books for parents/families/caregivers:

- Lapointe, Vanessa (2016) *Discipline without damage: How to get your kids to behave without messing them up*.
- Neufeld, G & Maté, G (2013). *Hold on to your kids: Why parents need to matter more than peers*.
- Payne, Kim John (2010). *Simplicity parenting: Using the extraordinary power of less to raise calmer, happier, and more secure kids*.
- Powell, W. & Kusuma-Powell, O (2010). *Becoming and emotionally intelligent teacher*.
- Siegel, Daniel J. (2012) *The whole-brained child: 12 revolutionary strategies to nurture your child’s developing mind*
- Tsabery, Shefali (2010). *The conscious parent: Transforming ourselves, empowering our children*.
- Wang, S & Aamodt, S (2012). *Welcome to your child’s brain: How the mind grows from conception to college*.

Resources for professionals:

See references.

- <sup>5</sup> T.S. Clouston, “States of Over-Excitability, Hypersensitiveness, and Mental Explosiveness in Children,” *The Lancet*, July 29, 1899, p. 209; Clouston’s original article on the subject was published in *The Scottish Medical and Surgical Journal*, June 1899.
- <sup>6</sup> Bromides were banned in North America in the 1970s due to their toxicity, but previously had been used as a treatment for numerous ailments, due to their sedative effects ([articles.mercola.com](http://articles.mercola.com)).
- <sup>7</sup> This was expanded upon in their theory of “Multilevelness and Positive Disintegration” (1977), which will not be explored here.
- <sup>8</sup> This scenario is a fictional amalgamation based on a number of such situations that I have faced in my 11 years of experience with my highly sensitive son, along with stories from other parents who have had similar experiences. Fortunately, our family worked with a Marriage and Family Therapist who is knowledgeable about highly sensitive individuals and we were able to learn and intervene early in his school experience and as such did not have to undergo the route outlined in the described scenario.

<sup>9</sup> Some articles that depict the 'epidemic' of childhood developmental mental health disorders:

Eliaz, Isaac (2014). Addressing the ADD/AHDH 'Epidemic'

Accessed from [http://www.huffingtonpost.com/maria-rodale/addressing-the-addadhd-ep\\_b\\_4452918.html](http://www.huffingtonpost.com/maria-rodale/addressing-the-addadhd-ep_b_4452918.html)

DeAngelis, Tori (2004). Children's mental health problems seen as 'epidemic'

Accessed from <http://www.apa.org/monitor/dec04/epidemic.aspx>

Frances, Allan (2010). Psychiatric diagnosis gone wild, the 'epidemic' of childhood bipolar

disorder. Accessed from <http://www.psychiatrytimes.com/articles/psychiatric-diagnosis-gone-wild-epidemic-childhood-bipolar-disorder>



## APPENDIX A

## QUESTIONNAIRE (HSP Scale)

INSTRUCTIONS: This questionnaire is completely anonymous and confidential. Answer each question according to the way you personally feel, using the following scale:

- | 1          | 2 | 3 | 4          | 5 | 6 | 7         |
|------------|---|---|------------|---|---|-----------|
| Not at All |   |   | Moderately |   |   | Extremely |
- 
- \_\_\_ 1. Are you easily overwhelmed by strong sensory input?
  - \_\_\_ 2. Do you seem to be aware of subtleties in your environment?
  - \_\_\_ 3. Do other people's moods affect you?
  - \_\_\_ 4. Do you tend to be more sensitive to pain?
  - \_\_\_ 5. Do you find yourself needing to withdraw during busy days, into bed or into a darkened room or any place where you can have some privacy and relief from stimulation?
  - \_\_\_ 6. Are you particularly sensitive to the effects of caffeine?
  - \_\_\_ 7. Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?
  - \_\_\_ 8. Do you have a rich, complex inner life?
  - \_\_\_ 9. Are you made uncomfortable by loud noises?
  - \_\_\_ 10. Are you deeply moved by the arts or music?
  - \_\_\_ 11. Does your nervous system sometimes feel so frazzled that you just have to go off by yourself?
  - \_\_\_ 12. Are you conscientious?
  - \_\_\_ 13. Do you startle easily?
  - \_\_\_ 14. Do you get rattled when you have a lot to do in a short amount of time?
  - \_\_\_ 15. When people are uncomfortable in a physical environment do you tend to know what needs to be done to make it more comfortable (like changing the lighting or the seating)?
  - \_\_\_ 16. Are you annoyed when people try to get you to do too many things at once?
  - \_\_\_ 17. Do you try hard to avoid making mistakes or forgetting things?
  - \_\_\_ 18. Do you make a point to avoid violent movies and TV shows?
  - \_\_\_ 19. Do you become unpleasantly aroused when a lot is going on around you?
  - \_\_\_ 20. Does being very hungry create a strong reaction in you, disrupting your concentration or mood?
  - \_\_\_ 21. Do changes in your life shake you up?
  - \_\_\_ 22. Do you notice and enjoy delicate or fine scents, tastes, sounds, works of art?
  - \_\_\_ 23. Do you find it unpleasant to have a lot going on at once?
  - \_\_\_ 24. Do you make it a high priority to arrange your life to avoid upsetting or overwhelming situations?
  - \_\_\_ 25. Are you bothered by intense stimuli, like loud noises or chaotic scenes?
  - \_\_\_ 26. When you must compete or be observed while performing a task, do you become so nervous or shaky that you do much worse than you would otherwise?
  - \_\_\_ 27. When you were a child, did parents or teachers seem to see you as sensitive or shy?

## APPENDIX B

## Finding Your ACE Score

**While you were growing up, during your first 18 years of life:**

1. Did a parent or other adult in the household **often or very often**...  
Swear at you, insult you, put you down, or humiliate you?  
**or**  
Act in a way that made you afraid that you might be physically hurt?  
Yes No If yes enter 1 \_\_\_\_\_
2. Did a parent or other adult in the household **often or very often**...  
Push, grab, slap, or throw something at you?  
**or**  
**Ever** hit you so hard that you had marks or were injured?  
Yes No If yes enter 1 \_\_\_\_\_
3. Did an adult or person at least 5 years older than you **ever**...  
Touch or fondle you or have you touch their body in a sexual way?  
**or**  
Attempt or actually have oral, anal, or vaginal intercourse with you?  
Yes No If yes enter 1 \_\_\_\_\_
4. Did you **often or very often** feel that ...  
No one in your family loved you or thought you were important or special?  
**or**  
Your family didn't look out for each other, feel close to each other, or support each other?  
Yes No If yes enter 1 \_\_\_\_\_
5. Did you **often or very often** feel that ...  
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?  
**or**  
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?  
Yes No If yes enter 1 \_\_\_\_\_
6. Were your parents **ever** separated or divorced?  
Yes No If yes enter 1 \_\_\_\_\_
7. Was your mother or stepmother:  
**Often or very often** pushed, grabbed, slapped, or had something thrown at her?  
**or**  
**Sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard?  
**or**  
**Ever** repeatedly hit at least a few minutes or threatened with a gun or knife?  
Yes No If yes enter 1 \_\_\_\_\_
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?  
Yes No If yes enter 1 \_\_\_\_\_
9. Was a household member depressed or mentally ill, or did a household member attempt suicide?  
Yes No If yes enter 1 \_\_\_\_\_
10. Did a household member go to prison?  
Yes No If yes enter 1 \_\_\_\_\_

**Now add up your "Yes" answers: \_\_\_\_\_ This is your ACE Score.**

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