Risk, Resilience and the Changing Reality of Adolescence in North America

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Abstract

This paper explores the connection between risk and resilience in adolescents, and how educators can guide adolescents in their natural risk-taking or risk averse tendencies to create authentic opportunities for growth and learning. The reality, responsibilities, real and perceived risks for adolescents have changed in recent generations. One of these changes is an increase in structured, supervised activities and fewer opportunities for free play or unstructured activities, thus reducing opportunities for young people to take manageable risks, develop judgment, and consequently gain a greater understanding of their role in the world. Fear of litigation, risk averse policies and parenting, shifting community design, a culture of fear and misinformation regarding real and perceived risk all combine to cloud our well-meaning efforts to protect youth and limit opportunities to develop executive functioning, self-regulation and sense of mastery over life circumstances. While North American adolescents perhaps have more material good and more opportunities than young people in other times in historical, rates of mental health disorders such as anxiety and depression have skyrocketed. Through a meta-analysis of publications and research on these topics, this paper seeks to identify patterns and trends in risk, resilience, and how educators can raise their awareness of developmentally-appropriate risk taking to develop self-regulation skills, executive functioning and a sense of mastery over life circumstances in order to contribute to resilience and inner strength in adolescents.

Introduction

This paper examines the relationship between risk, responsibility for actions and resilience in the context of contemporary adolescence, and how educators can utilize developmentally-appropriate opportunities for risk as a tool to promote resilience and inner strength in young people. By drawing on the inherent qualities of the teenage brain and creating space to make informed choices about risk, we can empower young adults to step confidently into the world.

The experience of young adulthood has changed dramatically over the course of history. For much of history, for better or worse, adolescents were considered capable of taking on substantial responsibilities such as hunting, employment, marriage and parenthood. History is full of examples of adolescents who – with some assistance perhaps – ruled empires, made great inventions and sailed the seas. Today in the twenty-first century, many adolescents have unprecedented advantages in education, leisure and material goods, yet often have few authentic opportunities to take on genuine challenges and meaningful work through which they can derive identity and self-worth.

Adolescents in North America receive confusingly mixed messages – they can vote, drive vehicles, join the military, are encouraged to choose a career direction before having much opportunity to experience the reality of work firsthand – while at the same time they cannot do relatively innocuous things such as purchase alcohol or even have the freedom to determine how they will spend much of their time – the expectation is that they will go to school. In some communities, adolescents are further controlled by curfews. In many ways, adolescence is an exciting and unique time in life – yes, with challenges and difficulties, but also with unmatched opportunities for growth and self-discovery. However, in recent decades adolescents in North America have experienced increasing rates of mental health disorders such as anxiety and depression. A study comparing young people's mental health with that of their peers 75 years ago found that 5 times as many teenagers scored above the test's cut-off for serious psychological problems (Steinberg). While perhaps some of this can be attributed to more attentive diagnoses, this still does not explain this worrying trend that is affecting young people

in one of the most developed, affluent parts of the world. What changes have happened in the lives of young people that may be contributing to this increase?

There is no one clear factor; however, certain changes are easily observable. For the past two decades I have worked with children and young adults in a variety of capacities such as tutoring, coaching, teaching, outdoor education, adventure leadership programs, wilderness trips and managing community recreation programs. Through this work I have had the opportunity to spend time with young people from a variety of cultures, environments and contexts ranging from remote communities in the Canadian Arctic to shantytowns in Central America. Whether taking inner-city students on their first camping trip or leading students from elite private schools on service learning trips in Ecuador or Mozambique, directing Shakespeare plays or serving food at a soup kitchen with a group of adolescents, each of these experiences offered opportunities to observe how different individuals respond to challenge, change and adversity. As I observed the growth opportunities that came from these experiences, it became clear that these experiences were remarkably empowering for young people – perhaps more so than traditional academics or highly structured experiences. However, it also became evident that much of daily life for adolescents does not offer these growth opportunities.

Over the course of this work with young people, I became increasingly aware that the childhood and adolescence experiences I took for granted in my youth were no longer a societal norm in much of North America. Certainly, there has always been a tremendous range of childhood experiences depending on geographical factors, social background, and many other factors. But this seemed like a shift that transcended even these categories. In my youth, my siblings and I participated in some structured activities such as music lessons or sports, but much of our time outside of school was spent freely and with little supervision. We climbed trees, constructed rafts and forts, waded in swamps to catch frogs, explored islands with our sailing dinghy, rode bikes and horses across hundreds of acres, and foraged for wild berries from our carefully guarded secret spots.

As we grew older, we took the bus or train to the nearest city (about 1 hour away), went on weekend camping trips, attended parties of questionable repute and went on trips – some

supervised and some not – to music competitions and foreign countries. At age 17, I decided I wanted to spend the summer working on a horse farm in Iceland, and tracked down a job, booked a flight, and headed off for two months. While I'm sure our parents kept an eye on our goings-on, at no point did I feel limited. The expectation was that we would be responsible, wear the appropriate safety gear such as a helmet or life jacket, do the relevant research by looking at maps or train schedules, and that we would make good choices. If I scraped my knee, was bucked off a horse, or ended up stranded at a train station in a foreign country, I almost always could attribute this consequence to choices I had made. Subsequently I learned from these experiences – to take responsibility for my actions, to plan ahead and to be comfortable problem-solving when unexpected things came my way. While this didn't always mean that I made the best choices (simultaneously standing on the backs of two galloping horses never worked out very well), overall I feel that these experiences contributed to an inner confidence and resilience, even in the face of uncertainty. When later we were faced with decisions that had the potential for more serious consequences – driving, parties, new relationships – there had been prior opportunities to develop judgment skills and self-regulation, and thus we approached these more consequential scenarios with some sense of our own values and goals.

Today when I talk with children or adolescents, observe their interactions with the world or read studies about use of time, it becomes evident that substantial changes have taken place in only one generation. In many ways, these young people are more worldly and skilled, yet in other ways they have lost out on certain experiences. About a decade ago I asked a group of ten year olds from the Greater Toronto Area if they liked climbing trees, and to my astonishment not a single child from that group had ever climbed a tree. Not that climbing trees is an essential requirement for childhood, but in my childhood it was a fairly typical activity. That small conversation impelled me to further ponder and research the reality of today's youth. While outwardly many things remain the same – going to school, participating in activities and so forth - many significant changes have happened in the past couple of decades.

Today the average teenager spends more than 11 hours with a variety of media such as smart phones, television and various other screens (Strasburger, 2013) . Less than 10% of

children meet physical activity guidelines of 60 minutes or more of moderate to physical activity each day (Health Promotion and Chronic Disease Prevention in Canada, 2015). While use of technology or sedentary periods are not inherently a problem, in excess they impact our physical and emotional well-being. These changes also have a direct impact on our social interactions and community structure. When I speak with friends who have young children, many of them express a longing to allow their youngsters to bike down their neighbourhood street or go to the park alone, yet they feel this choice would be unsupported, would be judged by others or would be too risky because no other kids are out there. And indeed, there is safety in numbers – the incidence of motor-vehicle bike accidents decreases exponentially the more cyclists are on the road as drivers look out for them better (Jacobsen, 2003). Overall, childhood and adolescence is more closely monitored even while unlimited access to the internet becomes the norm. Many young adolescents have literally never been out of adult supervision. Yet we expect these young people to go out and make major choices about their lives and the world. This disconnect understandably causes anxiety, uncertainty and disempowers rather than enables young people to be active participants in the world.

Adolescence is a powerful time. These pivotal years are an incomparable opportunity to learn, develop the capacity for meaningful attachments, cultivate an inner sense of purpose, and gain understanding of ourselves as individuals. The sensation-seeking teenage brain is primed to take on these tasks. However, for this learning process to take place, young people need to push and test themselves against large and small challenges. These opportunities for challenge and risk – even so small a risk as talking directly to a love interest or deciding whether to bike to school on one route or another – have shifted in the last generation. While there still are plenty of real risks – among them driving, one of the leading causes of death among adolescents – in many ways there are fewer opportunities for the incremental, manageable risks that come with unstructured time and a less anxious age – and provide authentic opportunities to develop fundamental life skills.

While deciding on my research question, I posed a variety of possible topics to my opinionated and engaged class of Grade 8 students. They politely listened to and commented

on a range of possible topics; however, when I broached the subject of changing exploring the changing reality of young people, freedom and perceived risk, they responded unanimously with almost a plea to pursue this subject. These are young people I have seen in challenging (albeit supervised) conditions – stormy weeklong wilderness kayaking trips, winter camping and dog sledding at -35 Celsius, volunteering at busy homeless shelters, performing challenging Shakespearean dialogues, planning and preparing meals for a dozen people – yet in daily life they have relatively few opportunities in which they can apply and develop their remarkable skills. Yes, as their teacher I sought to develop meaningful learning experiences and likewise their loving parents drove them to countless activities, games and lessons. However, when I look at the daily lives of these young people they have relatively few opportunities for self-directed, unfiltered interactions with the world. Young people have a strong desire to be actively involved and contribute to the world, and they have great potential – but if we hinder them from developing these abilities, we are doing them and ourselves a great disservice, and hindering them from developing the resilience that can give them strength to face the ups and downs of life. By examining contemporary perceptions, publications and research on the relationship between risk and resilience in North American adolescence, I am seeking to gain further insight into how educators, parents and anyone working with young people can support their development in an age-appropriate, informed and tangible way.

Research Methods

My primary method for research consisted of an extensive meta-analysis of publications and research on the topics of risk, resilience, adolescent brain development, historical and cultural perspectives on adolescence, and contemporary views on child and youth development. I sought to include a broad range of sources including academic research and publications as well as articles from popular magazines and journals, and parenting books. Much has been written about risk, resilience, the teenage brain, mental health, happiness and contemporary culture; however, many publications only focus on a few aspects of these interrelated topics. My intention with this meta-analysis is to combine disparate and plentiful sources into a concise and accessible format that is of use to educators, parents and anyone

working with young people. In order to enliven information from these various sources, I have interspersed this research with personal observations and anecdotes from my years of working in the classroom, youth leadership and outdoor education programs.

Disclaimer on Risk

Throughout this paper the topic of risk appears repeatedly. When I speak of age-appropriate risk-taking opportunities, I recognize that there invariably is a range of factors which may or may not be relevant to the individuals and situation in question. Risk is dynamic and varies greatly depending on the context, the individuals involved, and a host of other factors that cannot be reliably predicted. Anecdotes and observations shared in this paper should not be followed blindly – rather, use your own judgment and knowledge to make decisions regarding possible risks.

When I speak of opportunities to take age-appropriate, incremental risks I am referring to activities such as walking to the park, climbing trees, riding bikes, driving cars, and other activities that over the last decades have been somewhat accepted pursuits for young people in North America. I am not saying that all young people should take up base jumping or other extreme sports in order to develop their character, though if they choose to do so in a thoughtful manner, I wish them much joy. I also wish to clarify that when I speak of risk-taking opportunities for adolescents, I am not doing so in the context of what some researchers call risky behaviour (drugs, alcohol, risky sexual activity). Rather, I am observing that regular opportunities for manageable, low consequence risk can have a range of benefits for children, adolescents and people of all ages. Learning happens when we step out of our comfort zones.

Chapter 1 – The changing reality of adolescence

Adolescence typically refers to the chapter of life after the onset of puberty and before adult maturity. This is a very fluid definition – once this time period lasted just a few years, but today many young people are entering into adolescence earlier and adulthood later (Steinberg, 2014). Researchers cite a range of possible biological factors which contribute to early onset of puberty such as richer diets and endocrine disruptors from plastics (Steinberg, 2014). With less demand for young people to enter the workforce in North America, adolescence has in some ways extended well into what formerly was considered adulthood. Steinberg (2014) speculates that if current trends continue, adolescence may soon "take almost twenty years from start to finish" (p. 48).

Adolescent roles and responsibilities have varied greatly throughout history and cultural contexts. Even today, there is an enormous difference between the realities of adolescents around the world – consider a high school student at an elite private school in New England, a young Honduran migrant working illegally in California, a textile worker in Bangladesh or cattle herder in Kenya. Yet even with these disparate realities and incredible variety, some common ground can be found particularly in the field of neuroscience and adolescent behaviour.

Historical context

The concept of adolescence or teenagehood as a specific chapter or segment in life is a relatively recent construct. For much of history, as people matured and grew out of childhood, they moved directly into active roles in society. At other times in history, people in their teens often were married, went to war, ran households or entire kingdoms. At the tender young age of 14, Henry II sailed across the English Channel and raided several castles – all without his family's approval (Griffiths, 2014). In contrast, today in North America many teenagers aren't allowed to take the city bus alone.

Many factors interacted to form the norms we see today. Gielen sums this up well with: "Human development is the outcome of a continuous interaction between long-term evolutionary forces, evolved general and individual biological predispositions complex

psychological processes, changing physical environments, changing social forces and intricate cultural belief systems (Gielen, 2004). With increasing material wealth in North America, families and society became less dependent on the labour and contributions of young people and thus a cultural vacuum was formed.

While the idea of adolescence as a specific chapter in life is a more recent construct, youth has been recognized having distinct characteristics since in ancient times. Many legends, myths and folktales explore the theme of young people rebelling against their elders, challenging cultural norms and seeking identity and purpose in life. Greek philosopher Aristotle commented that young people "are apt to be carried away by their impulses" (Jensen, 2015, p. 105).

However, even with these so-called youthful impulses and passionate behaviour, for much of history adolescents were given considerable responsibilities. In the 1900s, most typical fifteen year olds had long completed any schooling they would receive and spent most of their days working alongside adults on farms and in factories (Gielen, 2004). Young people had regular real tasks, yet also had ongoing support and connection to multiple generations. Leisure time was spent around adults and the community as a whole. In contrast, now in early twenty-first century, the vast majority of both free time and structured time is spent with peers. Beyond immediate family, only a handful of adults such as teachers and coaches have regular meaningful interactions with young people.

As the "line between youth and adult became sharper, more intently watched and more demarcated" (Lesko, 2012, p. 74), specific movements developed such as S.S. Baden-Powell inspired Boy Scouts and Woodcraft Movement founded by Ernest Thomas Seton. These organisations felt that with increased leisure time there was a need for external challenges and learning opportunities to help form young people into suitable adults. A few decades later, visionary educator Kurt Hahn founded revolutionary institutions such as Schloss Salem and then Outward Bound. He felt that contemporary education failed to "satisfy the thirst for action, the thirst for mastery" inherent to young people and through his programs he sought to provide an antidote for these decays of modern youth (Hahn, 1958, p. 3) and to reignite the spirit of

humankind. Less than 50km away, another visionary educator Rudolf Steiner similarly sought to develop and implement a new system of education that would ignite the human spirit. Clearly this time period was rife with the desire to bring more meaningful education and experiences to young people adrift in society.

Adolescents – perhaps more so than all human beings – have a deep-seated desire to be needed. Historically, young people were needed and valued for their labor and tangible contributions to family and society. A hard day's work in the fields or house has immediate, practical results and rightfully fosters a sense of achievement and a sense of capability. Contrast this with achievement on an academic test – yes, we can feel a sense of pride, but the difference between an A- or B+ is a fabricated currency. With the exception of work placements or volunteer opportunities, ongoing real life connections to the world often are delayed until after post-secondary education. Staley (1988) claims that "today we have denied adolescents many of the responsibilities they had in the past – childhood is prolonged well into their twenties" (p. 99). There is value in not rushing into adult responsibilities but in some cases this delay means that young people are underprepared for the decisions that await them.

With post-World War II boom in North America and a decreased need for youth to immediately enter the working world, teenagers became a "distinct group with leisure and consumer power" (Lesko, 2012, p. 117). Iconic images from this time include James Dean in *Rebel Without A Cause*, the advent of rock n roll music, and the whole rebel narrative that takes shape when a generation of young people find themselves without a clear role or task. Bluntly put by Hines, "young people became teenagers because we had nothing better for them to do" (Reynolds, 2014, p. 69). While the rise of teenagers allowed for greater involvement in further education, sports, arts and other laudable pursuits, it also removed opportunities for authentic engagement in society.

Cultural Considerations

Cultural considerations and norms, too numerous to explore in the scope of this paper, influence the development and identity of adolescents. In North America there are immense

differences between the goals and experiences of young people - consider different realities experienced by high school students in an inner city school, university-oriented prep school or remote northern fly-in community.

Yet even with significant cultural differences, certain aspects of adolescent behaviour appear to be hardwired (see Chapter 2). A study by the Jacobs Foundation (Steinberg, 2014) observed that North American adolescents have comparable levels of risky behaviour to adolescents in other countries such as China, Colombia, India, Italy and Kenya; however, *how* adolescents explore these risks varies depending on the regional prevalence of factors such as access to driving, alcohol, smoking, or guns. Thus if policymakers are seeking to reduce risk for adolescents, it would be prudent to address broader social norms regarding gun control or motor vehicle use rather than seeking to specifically (and likely ineffectively) alter adolescent behaviour.

Even if sensation-seeking behaviour is a somewhat consistent biological aspect of adolescence nature, cultural norms still play a role in nurturing specific outcomes. Depending on an adolescent's cultural background, different behaviours are expected or rewarded. For example, social and extroverted behaviours are generally received positively in North America, whereas restrained and inhibited behaviour are associated with maturity and accomplishment in traditional Chinese society (Gielen, 2004). These differences have an impact on how parents raise and interact with their children. Furthermore, traditionally profitable careers such as medicine or engineering are valued more in some cultures, while other may be more open to entrepreneurship or creative pursuits – all differences which can shape the choices that adolescents (or their parents) make regarding their schooling and life choices.

Cultural background can also influence attitudes towards education and learning, and thus further have an impact on adolescents. Gielen finds that while American parents believe that academic achievement is largely determined by innate abilities, parents of Japanese and Chinese descent believe achievement is based primarily on diligence and effort (Chen, 2004). Less value on diligence and effort means that adults are less likely to watch their children attempt and fail at a task – even if the learning benefits ultimately may be greater. By placing

value on what are perceived to be innate talents at a time when many of these are still quite fluid and malleable, parents may be losing an opportunity to support the development of will, work habits and conscientiousness.

While there are still cultural differences, many aspects of the adolescent experience such as food, clothing and music are becoming increasingly globalised and cosmopolitan. Foods that were somewhat exotic a generation ago such as sushi are now a mainstream staple among many adolescents. Language may still be a barrier in some ways, but most young people who are plugged into mainstream media can – for better or worse – identify pop culture icons such as Justin Bieber, Taylor Swift or the Kardashians. More understated yet unique local culture at times is lost in the face of the pop culture juggernaut. In some ways this "complex hybrid nature of youth of contemporary global youth culture" (Tomlinson, 1999, p. 200) increases openness to different ways of being yet it can also complicate the individual search for identity and personal values. With no shared culture and history, the large and small choices in daily life have no framework and can become more overwhelming and individuals may feel more isolated. As Lapham (1997) observes: "I cannot help but think of people with no sense of history as orphans" (p. 67). In the absence of communally embraced values and shared customs and festivals, much of adolescence has become a pursuit of identity and meaning.

Gender Considerations

Gender remains a complex and at times controversial topic regarding childhood and adolescence. While outwardly gender equality has made positive strides, in many cases substantial differences remain between male and female adolescent experiences. This starts young – consider the prevalence of princess culture in toys and dress for young girls and brawny super heroes for young boys. Numerous studies of gender-based socialization show that adults will interact differently with an infant or child depending on whether they think they're interacting with a boy or girl (Gielen, 2004), attributing more daintiness to female babies and more strength and courage to male babies, even when in reality the male and female babies are acting exactly the same. A recent study published in The Journal of Pediatric Psychology observed that parents are 4 times more likely to tell girls to be careful than boys

(O'Neal, 2015), thus through nurture contributing to the gender stereotype that young girls are by nature more cautious and less physically capable. True, later on hormones will cause physical differences such as muscle mass, but many of these gender differences are still socially constructed.

Certain subjects such as math still have implicit negative associations for young women, even if explicitly individuals do not express this bias (Passolunghi, 2014). Women who are assertive rather than nurturing still can face harsh judgments in the business world (Heilman, 2015), while men who contradict gender stereotypes can equally face discrimination or judgment. Many stereotypes still dictate sexual behaviour among adolescents, with more aggressive sexual behaviour seen as typical of young men whereas young women are expected to be responsible and careful in their choices (Oakley, 2015). Increasing awareness and openness to transgender identities has further drawn attention to gender issues; however, the interesting fact is that gender is still used in an absolutist rather than embracing manner.

While there are still many contradictions in gender expectations and there is more progress to be made in this field, adolescents in North America do have a wide range of possible role models demonstrating intellectual, emotional and physical diversity among men and women.

Schools

With the rise of "prolonged adolescence" over the past century, there has been shift from families educating their children informally at home to formal education outside of the family. Whereas in the past a significant amount of education happened informally through shared chores, tasks and responsibilities (or more formally through apprenticeship), today much of this has been outsourced. Gielen (2004) argues that this change parallels a shift from responsibility and respectfulness to the community to greater focus on individuality and self-actualization and is typical of the shift from traditional to post-industrial societies. With greater emphasis on individual happiness and a physical transience as needed for work, education or

simply a change of scenery, these changes indeed contributed to a more individualistic society with less shared responsibility for each other.

Today many responsibilities that were once taken on by the community have been accorded to the individual or the government. Standardized public education has altered the face of society and has made basic skills such as literacy and numeracy more widely available than at any other time in history. However, the widespread implementation of our current educational system has at times been a stormy process. Opinions still vary widely on how to identify, develop and quantify good education. Educational institutions still struggle to adequately meet the needs of students at an emotional and spiritual level as well as academic realm. Lesko (2012) observes that "we have come to accept, even expect, that secondary schools will be hostile places for most students" (p. 166) While for some individuals high school is a memorable time of belonging and achievement, for many people it is a time of confusion, anxiety and at times deep unhappiness. Adolescence is when we begin to "experience the range of human emotion" (Staley, 1988, p. 6) and thus some highs and lows are normal; however, schools in their current state do not always support the adolescent craving for meaning and purpose. Increased understanding of adolescent development, neuroscience and psychology can help educators make decisions that will best serve young people.

Adolescence in the Twenty First Century

As we can see from the areas discussed above, adolescence in the twenty-first century comes with a unique set of challenges. In some ways young people have more freedom while in other ways they are entrapped by social expectations and structures. Staley (1988) observes that today's children are encouraged to make judgments about the world at an early age and that always deciding what to wear, what to eat, what show to watch can create a sense of insecurity rather than freedom. Simultaneously, the reassuring structures of extended family and strong community often are less present in the more transient, individualistic society of 21st century North America. Staley (1988) states that when "When family ceases being an authority in their lives, they (young people) seek authority elsewhere. ... Instead of feeling secure, they feel empty" (p. 37). The shift from childhood to adulthood naturally will bring stages of

rebellion, questioning and pushing against social norms and expectations – all healthy and important steps in reaching a sense of oneself within the broader world. However, without the internal compass and foundation that comes of belonging to a family and community with expectations and values, this rebellion only brings emptiness and a sense of inner isolation which can contribute to anxiety or depression (see Chapter 5).

As noted above, today's young people have a less defined path ahead of them – they are less likely to marry young, end up with a lifelong career or settle in one community for their whole life. Much of this is a product of the decreased need for competent labour from young people, along with other factors like increased material wealth and changing codes of morality. With the expectations of emerging adults shifting, Jensen (2015) quotes Arnett as stating that these "cultural and economic changes left twenty somethings feeling insecure, needing more education, finding fewer jobs and resisting marrying and settling down" (p.282) This sense of uncertainty complicates the adolescent experience, as young people now are dependent on parents for far longer. As previously discussed, young people are often are expected to pursue more extensive schooling than in the past, and ultimately are likely to take longer before finding meaningful occupations through which they can have an impact on the world. Staley (1988) concurs with these changes and (1988) describes the mixed emotions that come of this: "Frustration because of dependence on parents, desire to be accepted as an adult, wanting to make a mark on the world, and the need to get on with their own lives" (p. 99). While mixed emotions are neurologically and biologically an inalienable aspect of adolescence, this overall adolescent experience has been heightened and extended over a far longer time today than at other points in history.

While some adolescents in North America are underprivileged and face significant challenge, the overall many people in North America enjoy a high quality of life with the highest level of disposable income of all countries in the Organization for Economic Cooperation and Development (OECD Better Life Index, 2015). Many North American adolescents have a wide range of opportunities when compared with young people from elsewhere around the world – they have access to plentiful education opportunities, unprecedented material wealth,

adequate health care and a plethora of leisure activities. However, this cornucopia of opportunity does not seem to correlate with greater happiness or sense of worth. In fact, mental health disorders such as anxiety and depression have increased exponentially in North America. A study comparing young people's mental health with that of their peers 75 years ago found that 5 times as many teenagers scored above the test's cutoff for serious psychological problems (Steinberg, 2014).

At times these material opportunities even contribute directly to poor choices that affect health and happiness. More so than young people in other parts of the world, North American teens engage in suboptimal choice behaviour such as risky driving behaviour and substance abuse (Arnett, 2007). This is as much due to the social norms in North America as it is due to individual choices. Cars are readily accessible to many adolescents in their mid-teens, and while this is a culturally valued rite of passage among many people, the associated risks are made abundantly clear by high accident rates and subsequently high insurance rates. As if this isn't already sufficiently dangerous, the social nature of teenagers means that the mere presence of other teenagers in a car more than quadruples the chance of a crash (Steinberg, 2014).

While illegal substances exist around the world, North American adolescents have the disposable income to purchase non-essential items such as superfluous clothing sporting goods, and yes, illegal drugs. Psychology professor Suniya Luthar compared low income and affluent adolescents and to her surprise discovered that affluent teenagers used alcohol, drugs and tobacco more than low income teenagers (Tough, 2012). This same study also revealed that about a fifth of students had multiple persistent mental health problems, ascribed to low parental attachment, high parental criticism/expectations, and minimal after school supervision. Clearly material wealth is not a replacement for loving but firm boundaries, meaningful relationships with adult family members and expectations for responsible choices. The presence and accessibility of firearms is another concerning element that is reflected in statistics regarding adolescent behaviour in North America. Violent firearms crimes among adolescents are 5 times higher in US than Canada (Arnett, 2007), while adolescents in Mexico

are at great risk due to the presence of powerful drug cartels. Again, these outcomes are as much a product of society's choices and priorities as it is of the individual adolescents, emphasizing the need for thoughtful policy rather than reactive programs with limited success.

Adolescents in North America are clearly facing a variety of real risks including driving, illegal substance abuse and mental health disorders. How are these connected to the unique attributes of the teenage brain and how are educators meeting – or not – the needs of the developing adolescent?

Chapter 2 - The adolescent brain

Much has been written and researched about the adolescent brain, particularly with regard to the still-developing frontal cortex and the subsequent correlation to impulsive, potentially risky behaviour. While the volatility of the adolescent brain can lead to explosive moments, this is also a time of great opportunity. Jensen (2015) states that "the teenage brain is a wondrous organ, capable of titanic stimulation and stunning feats of learning" (p. 6). Even decades later, almost all individuals can recall specific emotions or experiences from their adolescence with vivid detail. Whereas childhood and adulthood may be a blur at times, the emotions, sights and experiences of adolescent are remarkably powerful. Not for nothing, this is when we do much of the work to discover who we are and how we belong into this world.

Children live in an unconscious state, united with the world around them, and only gradually do they awaken to using critical independent thought. In contrast, in adolescents these attributes are in overdrive and they live in a turmoil, pulled in different directions by contradicting emotions and thoughts (Staley, 1988). Teenagers are still trying to gain control over their own thinking and seeking to balance between external thoughts and their own opinions, all without having enough experience to filter through these contradictions. Learning to thrive in an ever-changing world – whether in early hunter-gatherer days or contemporary North America – requires an adaptable and keen mind. Jensen (2015) explains that "survival depends upon knowledge, and so the young brain must be flexible and malleable depending upon one's environment" (p. 83). He further states that the "growth of synapses make teens sensation-seeking learning machines" – an eloquent turn of phrase that readily describes some of the interesting choices we've all seen young people make.

The adolescent brain is wholly unique in its ability to take in information and respond with powerful emotions. Tough (2012) describes the adolescent brain as an "incentive processing system (which) is remarkably sensation seeking, emotionally reactive, and attentive to social information" (p. 21-22). Not until later in adolescence will individuals develop the cognitive control system that regulates these urges. New research indicates that the brain continues to mature into one's twenties and demonstrates remarkable plasticity throughout

life (Steinberg, 2014). The teenage brain is only about 80% of the way to maturity and the last place to connect is the frontal lobe, which is responsible for insight, judgment, planning and abstraction (Jensen, 2015). Thus while we can rightfully expect teenagers to exhibit curiosity, engagement and critical thought, it is not until our mid-twenties that these are balanced by consideration of more long-term consequences. These frontal lobes are the site of critical neural components of "executive functions" such as planning, working memory, and impulse control, and are among the last parts of the brain to mature (Johnson, 2009). Jensen (2015) states that "insight depends on the ability to look outside of oneself, and because that skill develops in the frontal and prefrontal lobes, it takes a while to develop" (p. 64). Steiner (Steiner et al, 2001) observes that in early adolescence young people tend to extreme opinions of loving and hating something, while only later do they develop the capacity to see complexity and nuance.

The attributes of the adolescent brain are both a tremendous gift and a potential hazard. Jensen (2015) observes that "rewarded by dopamine with each new sensation and learning experience, adolescents are susceptible to both incredible learning and potential addiction" (p. 54). If adolescents have opportunities where they can challenge themselves, take healthy risks and test their own boundaries, this can be a time of great learning. If adolescents do not have these healthy opportunities, their brains are still hardwired to pursue risks in order to gain a greater understanding of the world and themselves. Even in the face of healthy risks, adolescents may make choices with negative long-term consequences, demonstrating the need for some guiding external boundaries yet also the trust and freedom to develop good judgment.

All experiences that we undergo as a child and adolescent have an impact on our being. Steinberg (2014) states that "the developing brain is sculpted by both passive exposure and active experience" (p. 27). While at times this may be an intimidating thought given the potential impact of negative experiences, it also has positive benefits. With regular practice, the brain's plasticity means that we can develop beneficial skills like self-regulation that will then serve us in future challenging situations. Steinberg (2014) says of these skills that we can 'use it

and improve it' (p. 34-35), and indeed there is much evidence indicating that early opportunities to develop self-regulation skills have positive impacts in adolescence. Free unstructured play is a particularly effective way to develop self-regulation skills that will have a positive impact later in life. Repetitive, structured, controlled experiences do not necessarily create great growth in young people, but each new experience or stimulation triggers growth in neuron size, dendritic branching and number of synapses per neuron (Jensen, 2015). Both children's and adults' brains are shaped by experience, but in young people this is particularly evident.

Staley (1988) speaks of the sixteenth/seventeenth year change in which adolescents feel a sense of spiritual separation and face their own mortality. One way of confronting these existential quandaries is through risk – car accident, suspension from school, climbing a dangerous cliff – search for meaning of life and in life. By facing our mortality, we incarnate fully into our present being. Teenagers are in many ways at a vulnerable stage in their development. Steinberg (2014) observes that: "distractions, strong emotions, excitement, fatigue, the mere presence of other adolescents can make teenagers more likely to take risks" (p. 77). Given knowledge such as this, parents and policymakers can help develop frameworks that can reduce real risk while still leaving space for individual learning opportunities.

These internal and external processes help shape our brain and being. As adolescents mature, the brain "prunes" itself. These adolescents are no longer like children who soak up everything, but their brain is becoming a leaner and more efficient machine (Jensen, 2015). This is still a time when learning happens more easily than in adults. Jensen (2015) identifies this period in life as "a time to identify strengths and invest in emerging talents. Also the time for best results from remediation, special help, for learning and emotional issues" (p. 79). As we enter adulthood, our brains trade 'plasticity for efficiency" (Steinberg, 2014, p. 44). Thus while our learning capacity may never be quite as high again, we become more efficient at tasks and more emotionally stable.

Trauma in Childhood and Adolescence

Given that childhood and adolescence are when the brain is at its most malleable, it is no surprise that traumatic childhood experiences can leave a lasting and complex impact on the developing human being. Trauma can include witnessing a specific violent event, or experiencing ongoing fear or abuse. The Adverse Childhood Experiences studies (ACE) show a strong correlation with traumatic events in childhood and mental health disorders later throughout life.

Some degree of shock – perhaps a near miss while driving – can inspire adolescents to connect to their higher self and make more conscientious decisions in the future. However, ongoing traumatic experiences trigger the hypothalamic-pituitary-adrenal axis (HPA) and thus have a negative impact on a host of biological and psychological factors (Jensen, 2015). To complicate matters further, traumatic experiences can vary greatly depending on the individual. Gladwell (2015) quotes psychiatrist J.T. MacCurdy in *The Structure of Morale* explored how traumatic experiences such as the London Blitz can be profoundly damaging for one group and beneficial for another group. If individuals see themselves as capable of influencing their environment and are supported by a strong community, even great hardship can be overcome; similarly if individuals perceive themselves as powerless and isolated from possible support networks, trauma can have particularly lasting effects.

As educators and people working with young adults, greater understanding of these protective elements and how we can support individuals overcome trauma will have an impact throughout an individual's lifetime.

Stress and the Teenage Brain

Living in the twenty-first century brings many benefits: greater human rights, individual opportunity, and medical advances like antibiotics come to mind. However, few people would argue that in North America we have also created a culture of busyness and intense ongoing stimulation. Whether positive stimulation – messages from friends, cute photos of cats, or funny internet memes – or negative images such as overwhelming refugee crises, kidnapped

children or new carcinogens – our minds are continually bombarded. Louw (2005) quotes family therapist Michael Gurian, best-selling author of The Good Son and The Wonder of Boys argues that "neurologically, human beings haven't caught up with today's over-stimulating environment. The brain is strong and flexible, so 70 to 80 percent of kids adapt fairly well" (p. 101). While many people manage to function surprisingly well in this environment, some understandably struggle to meet the demands of this frenetic pace.

Being adaptable, many young people may manage to adjust somewhat to ongoing stress present in daily life; however, this also has negative effects. The human hypothalamic-pituitary-adrenal (HPA) stress response system is tailored to respond to specific short term dangers like a hungry sabre tooth tiger or rampaging mastodon, but not for dealing with ongoing worries triggered by modern society (Tough, 2012). Raised levels of stress produce long term physical, psychological, and neurological negative effects. One direct impact of stress is decreased ability to learn. One study showed that rats can't perform task like going through a maze with the added stress of a cat outside their cage (Jensen, 2015). Obviously human beings are different than rats, but most people cannot perform at their best under continued intense pressure.

The part of the brain affected most by stress is the prefrontal cortex, critical in both emotional and cognitive self-regulation (Tough, 2012). Since adolescents are still developing frontal cortex, they are particularly susceptible to the effect of stress on their brains. Primal feelings such as the stress hormone induced fight or flight responses produced by hypothalamic-pituitary-adrenal axis (HPA) are more extreme in adolescents than adults because their pre-frontal cortex is not as developed to control fear and anger (Jensen, 2015). Thus a situation that may be tolerable to an adult may be utterly overwhelming for an adolescent.

In his seminal book *Future Shock,* Alvin Toffler (1970) talks about the concepts of 'information glut' and 'cognitive overload.' As adults we can seek to have the foresight and awareness to take steps to limit our exposure to media, information overload and over-stimulating environments. As adolescent brains are programmed to seek this kind of sensory overload, they are particularly susceptible to stress and subsequent ailments.

Risk-taking and risk-averse individuals

It would be foolish to state that all adolescents are risk takers. There also are cautious, risk-averse adolescents carefully trying to figure out their place in the world. In some cases, much of this processing is happening internally rather than through over-the-top external behaviour. As educators, our role is to meet all of these individuals and encourage them to interact with the world in a way that promotes their growth and learning.

While everyone would like to believe their teenager is the exception, statistics show that "risky behaviour peaks in late teens" and "so do self-inflicted injuries, unintentional drownings, experimentation with drugs, accidental pregnancies, property crime and fatal automobile crashes" (Steinberg, 2014, p. 69). These sobering statistics are enough to encourage any parent or policy maker to re-examine our assumptions. As young adults experience "separation from secure world of childhood" this forces examination of the inner world, and some individuals step out very cautiously while others charge into the world far too quickly (Staley, 1988, p. 36). The mystifying thing is that teenagers are just as aware of the risks as adults – perhaps more so. After their extensive prevention programs, teenagers can tell you all about the risks of smoking, illegal substances, or driving recklessly. However, the strong sensations and emotions they experience are not balanced by prefrontal cortex until later (Steinberg, 2014), and hence it is important to start at a young age to instill self-regulation capacities.

As noted in the previous sections, adolescence is a time of great opportunity, defined by unprecedented willingness to try new things, desire to gain greater sense of self and the world. Unfortunately this does not always manifest itself in a way that meets social expectations or norms. As Steinberg (2014) says: "The problem is we want adolescents to take some risks – try out for the school play, take an AP course (…), etc but we don't want them to try drugs or break into buildings" (p. 75). The task of adolescence – and those working with adolescents – is to create the internal self-regulation and external factors that can contribute to positive risk-taking experiences.

Protective Factors

The brain is a fragile and complex organ. As adolescent brains are still developing, they are particularly susceptible to stressors. Beyond the danger of direct impact such as concussions, seemingly low-level stresses can also have a long-term negative impact. However, certain protective factors can help individuals even from challenging backgrounds adjust more successfully. Researchers observe that "successful adaptation to stress may be engendered by protective factors such as strong family and community ties" (Gielen, 2004, p. 256). Similarly, an increased sense of locus of control and self-regulation can provide tools to deal with stress and adversity. Conflicting research delineates how individuals and society overcome or internalize traumatic experiences such as the London Blitz (Dagdeviren et al, 2016), in some cases creating a myth of resilience in the face of overwhelming devastation. Whether real or perceived, internal and societal narrative can go far in the face of tremendous hardship.

Human behaviour is not always altered by mere factual information, but rather by how we respond to information and situations. Furthermore, we are bound to be unsuccessful if we seek to go against human nature. Steinberg (2014) states that: "programs aimed at enhancing adolescents' general capacity for self-regulation are far more likely to be effective in reducing risky behaviour than those that are limited to providing them with information about risky activities" (p. 105). Many programs and activities can help develop self-regulation skills, such as arts, sports, outdoor trips, and even simple household chores develop a sense of responsibility and discipline.

There are further factors that contribute to greater chances of success at overcoming challenging or traumatic situations. Gielen (2004) observes that: "personal factors, including child temperamental characteristics, cognitive competence, and coping styles, availability of support systems including a stable relationship with at least one parent or reference person, and community support may mediate and moderate negative impact of adverse circumstances" (p. 62). Particularly strong, stable relationships are seen as a key indicator for overcoming difficulty. As educators and policymakers we can seek to develop strategies that support the development and continuation of these protective factors.

Chapter 3 – Perceived risk versus real risk

How do we determine risk?

Before we proceed to examine the prevalence of risk and risk-taking opportunities in the North American adolescent experience, let us explore the relationship between real and perceived risk, and how we form these assessments. Individual perceptions or experiences of risk understandably vary greatly. Public speaking may be terrifying for one person while rappelling down a cliff or kayaking off a waterfall may be seen as perfectly acceptable by someone else. Certain risks – such as the health risks associated with drinking sugary drinks or the risks associated with daily driving – are generally accepted cultural norms, while other risks – such as children walking to the park alone or cycling to visit their playmates – are shifting. How do we determine real versus perceived risk?

While we as a species have managed to survive and adapt quite well, study after study demonstrates that human beings are remarkably incompetent at accurately assessing risk. One study by Paul Slovic and Sarah Lichtenstein asked respondents to compare health statistics and risks – something we have likely all pondered at some point in our lives. Even though strokes cause almost twice as many deaths as all accidents combined, 80% of respondents judged accidental death more likely (Kahneman, 2011). When in another study participants were asked about risk and driving, 90% of drivers said they are safer than the average driver (Sunstein, 2004) – a statistical impossibility! Clearly our personal bias – positive and negative – flavours our perception of actual risk. Even in the face of statistically sound information (not that this is always available), our emotions, wishes and perceptions may misguide our actions. Consider the astonishing rise and fall of Bre-X stocks in the 1990s from two cents to $200 a share (Lapham, 1997). Realistically, there was absolutely no strong foundation for this stock– yet the dream of success drove many investors to make questionable choices. At times our emotions and imagination lead us to take farfetched risks.

As discussed above, emotion plays a powerful role in forming our choices regarding real and perceived risk. For example, even though driving causes far more deaths than air travel,

many individuals feel they have more control than while if they are in an airplane and thus are willing to take this risk (Sunstein, 2004). After the 9/11 terrorist attacks, travellers switched to driving rather than flying and promptly caused a four-digit spike in automobile fatalities (Gardner, 2008). After the tragic Hatfield train crash in Britain 2000, one third of rail passengers started using highway (which is ten times more dangerous), and promptly the death toll of traffic accidents increased measurably (Sunstein, 2004). When people "are favourably disposed towards a technology, they rate it as offering large benefits and imposing little risks" (Kahneman, 2011, p. 139). These examples demonstrate how our social conditioning and current value system leads us to consider driving to be a necessary and beneficial part of daily life and thus an acceptable risk, even though in many parts of the world there are effective examples of alternatives such as highly effective public transit and mixed-use neighbourhoods. Given the impact of these various factors noted above, such as the influence of social norms and emotions, we are not particularly adept at making risk assessments.

By gaining further insight into how we make decisions, we can seek to improve this process. Decision making about risk is often more about approval, acceptance an emotion than about accurate information. A range of factors can affect our decisions. The so-called cascade effect occurs through our desire to "earn social approval and avoid disapproval" (Sunstein, 2004, p. 87). According to this theory, if multiple individuals have a certain view, we are more likely to follow it. In the face of this cascade effect, it takes a confident person to take their own stance and trust in their capacity to seek out and interpret potentially unpopular information.

Mass media further exacerbates this cascade effects. Media reports are "often careless and the typical citizen has no time to investigate the origins of assertions about environmental hazards or safety problems" (Sunstein, 2004, p 95). Furthermore, the media tends to only tell partial stories – for example, it may report on a missing child with screaming headlines but then will not tell about how the child was found safe and sound the following day. "When people lack reliable or direct information, they rely, much of the time, on what other people tend to do or think" (Sunstein, 2004, p. 289). As educators, we can seek to teach students how to gather and interpret reliable information – a much needed skill in this era of profuse but at times

erroneous information. In our teaching and discussions, we must explore not only "facts" but also the origins of information, possible biases, who may benefit from certain trends, and how to use observation and critical thinking in the face of these powerful influences.

As is evident in the preceding sections, decision making is a complicated process. Kahneman (2011) quotes neuroscientist Antonio Damasio's proposal that "people's emotional evaluations of outcomes, and their bodily states and the approach and avoidance tendencies associated with them, all play a central role in guiding decision making" (p. 139). Much of our energy, resources and time worrying about potential risks is misguided. For example, the annual risk of dying in a motor vehicle accident in the United States of America is one in 6,498 while the risk of being killed in a terrorist attack even including historic incidents such as the 9/11 attacks is almost one in 100,000 (Gardner, 2008). If reducing risk of death was the main intention, clearly it would be advisable to put energy into making car travel safer rather than pouring millions into the murky waters of terrorism prevention. This inability – whether unintentional or calculated – by government, institutions and individuals to make accurate risk assessments has a direct impact on how we seek to control risk for children and adolescents.

Media and Risk

Given that we are already not particularly adept at interpreting risk, media attention on specific events and activities further skews our sense of risk. The vast majority of preventable deaths in the US are caused by risks associated with smoking, poor diet and exercise, and alcohol abuse. (Sunstein, 2000). However, this does not make for news that sells – few people want to read about how they should get off the couch and eat less French fries. Therefore media outlets will inevitably bring more dramatic and unusual news, even if these do not reflect an accurate portrayal of realistic risks and events. Even if readers or viewers are consciously or intellectually aware of this bias, the subsequent images and stories still affect our worldview at a deep emotional level.

Attacks by wild animals are one example of a fear which is incredibly unlikely yet receives a disproportionate amount of media attention. For example, we are 30 times more

likely to be hit by lightning (also very unlikely) than to be bitten by a shark (Sunstein, 2004). Yet thanks to *Jaws*, media attention and instinctive fear, many people have a powerful emotional response to the possibility of a shark attack. Each rare shark attack triggers a media circus and talk of legal reforms about shark feeding and monitoring wildlife, yet all of these efforts are unlikely to save a single life because the risk is so infinitesimal. A better use of public funds and resources would be to address the statistically most common causes of death such as vehicle accidents and poor choices regarding lifestyle.

We find ourselves at an interesting time in history where immense amounts of information is available but we do not always have the historical perspective or big picture context to understand how current events are interconnected or have developed out of past relationships or historical injustices. Lapham (1997) sums this up eloquently: "People unfamiliar with the world in time find themselves marooned in the ceaselessly dissolving and therefore terrifying present, divorced from both the future and the past (..), condemned to a state of constant dread" (p. 65). Without historical context, knowledge of different belief systems, trade networks or geographical idiosyncrasies, the world is indeed an overwhelming place where media can easily skew our perception of risk and reality.

What are real risks in North America? According to numerous studies, the leading cause of death are heart disease and cancer (Heron, 2013). Yet having this information does not always inform our actions. Many people some people are unwilling to hike in woods where there is an infinitesimal risk of a bear attack, but are quite willing to make unhealthy lifestyle choices, thus increasing their chances of the very real risk of heart disease. For young people, the "major causes of death (…) are accidents, homicide and suicide – causes are largely preventable and reflect the stresses young people experience during this stage of life" (Brown et al, 2002, p 37). By addressing the underlying issues that contribute to death rates in young people – poverty, inequality, prevalence of firearms, mental health issues and more – we could have a better chance of actually having an impact on these preventable deaths.

As discussed throughout this section, the media's attention on specific things skews our sense of risk, hence many people are more concerned about the unlikely risk of a kidnapping by

strangers rather than common motor vehicle accidents. In order to balance the influence of the media, individuals require access to accurate information, critical thinking skills and a strong background of knowledge.

Risk and youth

When looking at risks involving children and youth, emotions can understandably play an even stronger role in influencing our decisions. As educators we are well aware of the impact that one powerful image can have compared to a string of lifeless facts, and we seek to use this in our teaching to bring material to life. However, the same contrast applies to our impressions of risk – a single vivid picture inevitably provokes a stronger response than statistical information (Sunstein, 2004). While we cannot deny the power of this single image, at times it may lead us to misinterpret or disregard important considerations.

Outdoor activities are a particularly vivid example of how emotion can override statistical considerations. Overall, throughout North America there is a long history of well-established outdoor pursuits and camps with manageable, acceptable risks and a host of benefits for participants. However, a few specific incidents have changed the willingness of schools and camps to participate in what – with the right planning and risk management – could otherwise be a tremendous positive experience for participants. Openness to water-based activities changed dramatically after the 1978 Lake Temiskaming tragedy in which 13 students from St. John's School drowned due to a variety of factors (Raffan, 2002). Attitudes to alpine winter travel changed after the 2003 Connaught Valley Creek avalanche in which seven Strathcona Tweedsmuir School students were killed. Contributing factors to these tragedies could have been mitigated to some degree, and in the case of Strathcona Tweedsmuir, the school continues to run a backcountry winter program. The ripple effect of these striking events has had a widespread impact on the willingness of educational institutions to participate in wilderness pursuits. However, while these events were tragic, in the big scheme of risk and adolescents, outdoor pursuits account for a miniscule proportion of death. Young people are still far more likely to die from motor vehicle accidents, homicide and suicide (Brown et al, 2002). Yet strangely enough, getting a driver's license is a celebrated rite of passage.

When working with young people and assessing possible risks, emotion and powerful images easily counteract reason. According to Kahneman (2011), our minds have a "basic inability to deal with small risks – we either ignore them altogether, or give them far too much weight – nothing in between" (p. 143). Every parent who has watched with bated breath while their child climbed a tall tree or waited up late for a teenager to return from a party knows the power that unlikely but vividly imagined dangers can have in influencing our perceptions of risk. To further complicate matters, "people often believe themselves to be immune from risks that they acknowledge are real and significant with respect to others" (Sunstein, 2002, p. 262). Many people are willing to take a risk because they feel they are immune to any potential dangers.

Society and individuals seek to protect children and youth, but in some cases these attempts are misguided. Overly "safe" playgrounds limit healthy risk-taking activities and in some cases actually lead to more injuries as children seek the stimulation and challenge necessary for healthy development (Gill, 2007). Evidence from several studies suggests that limiting opportunities for risks actually leads to more hospitalizations and harmful effects than if children have the opportunity to engage in developmentally appropriate, incremental risks (Brussoni et al, 2012). In a litigation-minded and fearful society, the actual developmental needs of children lose priority. A handful of "experimental" educational facilities have been featured in popular media such as "the school with no rules" (Weale, 2014) and Danish forest kindergartens (Roberts, 2016) which seek to counteract this trend; however, even though people are intrigued and see value in this type of education, an actual shift from interest to action is slow to happen.

If anything, the trend towards caution and control is growing stronger. One vivid example of changing attitudes towards risk and supervision is in how children travel to and from school. In 1971, 80% of seven and eight year old children went to school on their own. In 1990, only 9% of children travelled to school on their own (Griffiths, 2014). To some degree this may reflect changes in living arrangements and fewer local schools; however, much of this is due to the perceived safety of driving. Yet in reality driving is approximately 8 times more likely

to involve a fatality than the risk of walking (Gardner, 2008). While independent versus parent monitored travel to and from school may seem like a small thing, it is reflective of bigger trends in society that affect the physical, emotional and mental health of our young people.

Children and adolescents are quite capable of assessing potential risk; if not, the human species hardly would have reached the current unprecedented numbers. Young people are most likely to make good judgments if they have had incremental opportunities to make decisions and experience the consequences, and if they have had prior opportunity to develop self-regulation skills. Kahneman (2011) states that "to survive in a frequently dangerous world, an organism should react cautiously to a novel stimulus, with withdrawal and fear" (p. 67). However, if the situation is actually safe, it would be beneficial for the caution to fade and this new situation can be added to the internal catalogue of life experience. If young people never have the opportunity to learn how to respond to new situations, they will respond either with fear and anxiety (see Chapter 7) or with poor decisions. For the neurological reasons discussed in Chapter 2, teenagers do not have the most adept skill set for judging risk; however, if they never have the opportunity to develop it further, the potential costs are even higher.

Policy development and risk

As demonstrated above, personal understanding of real and perceived risk is often limited. This same problem extends to policy development, where attempts to manage are often poorly informed and misguided. Kahneman (2011) quotes legal scholar Cass Sunstein's observation that the "existing system of priorities in United States displays a very poor setting of priorities, which reflect reaction to public pressures more than careful objective analysis" (p. 141). Even if steady and systematic analysis of risk would lead to more successful prevention of harm, governments are often quick to react to singular events that actually are unlikely to happen again.

One fascinating aspect of risk is that while certain elements can be quantified and measured, a large component of what we to perceive to be a risk is based more on a society's values and priorities. Risks are "socially constructed" and "individuals and societies will be

greatly concerned about some hazards but treat others as inevitable aspects of life" (Sunstein, 2004, p. 107). This is visible in countless facets of life; for example, broken bones from skiing or football are considered a somewhat acceptable and inevitable part of life – perhaps even a badge of honour in some circles – whereas a broken bone from a failed attempt to climb a tree or build a zipline across a river might be considered poor parental supervision. It is interesting to observe that the acceptable risks are products of carefully managed, elaborately structured and economically impactful activities while children playing in the woods do not directly contribute to the economy, offer advertising opportunities or opportunities for indoctrination.

As discussed in the preceding sections, most "people appear to not have a clear sense of the relationships among different risks that are confronted in everyday life" and "tend to react to sensationalistic anecdotes and scare tactics" (Sunstein, 2004, p. 256). Media or public opinion can exacerbate this effect; Kahneman (2011) concurs with these patterns and notes that "when an unlikely event becomes the focus of attention, we will assign it much more weight than it deserves" (p. 316). Our policies – whether regarding schoolyard rules or national safety – often reflect our limited understanding rather than statistically sound information. Due to information cascades, people are more likely to react to small unlikely risks. Sunstein (2004) observes that "when like-minded people talk largely to one another, they tend to move towards extremes" (p. 290). Today with online communities there are plentiful opportunities for like-minded people to seek affirmation of their beliefs, and ultimately these narrowing perspectives can limit the capacity to make good decisions.

In order to make accurate assessments of risk, policy makers need to recognize their inherent cultural bias. There also is a tremendous need for accurate information – a critical component of decision making which is not always valued. Consider the Canadian government's decision under the Harper Conservatives to discontinue the mandatory long-form census in 2010 (now recently reinstated by the Trudeau Liberal government). Only with reliable and consistent information can we seek to identify meaningful patterns and act accordingly to best serve the needs of society.

Making decisions

With all this unclear information, emotions and uncertainty regarding decision making, how do we move forward? One way is to gather reliable information, observe what happened historically, and then respond accordingly. Sunstein (2014) states that "sensible people who want to reduce large risks, and to ignore tiny ones, will care about history" (p. 60). In Waldorf schools, students are given a strong foundation in world history which can help ground them in later decisions, whether at a personal level or as leaders of a country.

Our assessment of risk is closely linked to convenience. If driving in North America became less convenient and if alternatives became more convenient, our opinions of the associated risks would no doubt change rapidly. Sunstein (2014) gives the example of the trend of asbestos removal from schools – though the risk of a child getting cancer from covered asbestos insulation is about one third as likely as the risk of being struck by lightning, parents lobbied for the asbestos to be removed. However, when the parents found out the school would be closed for weeks and it would be very inconvenient, they suddenly thought it seemed like a very bad idea. As policy makers and individuals, we can seek to make genuinely risky behaviours inconvenient (E.g. making tobacco difficult and expensive to access) while working to make relatively manageable risks such as climbing trees (which each year hospitalizes half as many children as falling out of beds) an acceptable risk. It takes effort to go against norms, but the blindly following false information may have even higher costs.

As already stated, much could be summarized, brought together in a comprehensive way, avoiding the repetitions with slight variations.

Chapter 4 - Contemporary Context of Adolescents in North America

In the preceding chapters we have examined adolescence through a cultural and historical lens, explored the distinct characteristics of the teenage brain, and considered our relationship with perceived and real risk. With this background knowledge to inform our understanding of risk and adolescence (both culturally and biologically), let us explore some of the unique characteristics of adolescence in the twenty-first century.

In every generation there are recurring trends and at times grumblings about 'young people nowadays'. Every generation of young people appears to feel some sense of alienation and rebellion against what has come before; in fact, some would argue that this is a healthy part of developing one's own identity and values. However, certain characteristics – whether political, economic, cultural or otherwise – do tend to become associated with certain generations of young people. For example, the 1950s are known for the birth of rock n roll, James Dean and his teenage angst. The 1960s are known for protests and free love, and so forth. Thus it would be logical that certain characteristics also define adolescence in the 2010s. Some subjective factors such as stress and anxiety are difficult to measure and pinpoint; however, a variety of longitudinal studies have sought to quantify these changes over recent decades. After researching trends in both academic/medical journals and popular publications, the following are areas in which there have been noticeable changes for adolescents.

Academic expectations and external pressures

Adolescent participation in formal education has increased greatly in the past century. In many ways this is a positive change which opens up new opportunities and expands choices for young people. However in some ways this increased focus on formal education, specifically with the end goal of college or university, does not serve adolescents who may be less academically inclined but have valuable gifts to contribute to society.

For much of history, post-secondary education was pursued by only a small percentage of society. In many cases, formal academic education was the realm of the ruling elite or specific religious orders. For most people, learning happened through apprenticeship, informal

exchanges with family or community members, and through observation and experiential, hands-on participation in daily life. In North America between 1700 and 1900 less than 5% of the population attended university (Thelin, 2003), yet clearly many people lived meaningful, productive lives. With the decreased need for adolescents in the workforce after World War II (see Chapter 1) and with the perceived need for specialization in careers, society began to fabricate more elaborate structures to keep young people occupied for longer, thus prolonging adolescence and also academic expectations and pressures.

While there is value in these academic opportunities and a need for specialised training in some fields, our current traditional schooling system was originally designed primarily to produce workers for the industrial revolution, not independent thinkers who have the skills and imagination to make creative changes. For many individuals, the pressure of performing in these structured and at times restrictive educational environments does not lead to positive experiences or successful outcomes. Since the 1970s, over 50% of the population in North America has attended post-secondary education, changing what formerly was an elite pursuit to a mainstream activity (Thelin, 2003). Some people joke that undergraduate degrees are the new high school degree – a basic requirement for many types of employment. Yet many graduates of university and college programs are left with crippling debts (Fry, 2014) and unclear life paths; the current educational approach and its associated pressures are often not a winning combination.

The pressure for academic success and the subsequent emotional and economic cost to young people is at an unprecedented high compared to previous generations. Particularly young people who are more sensitive to external pressures can put immense demands on themselves to do what is 'right', which creates a deep fear of failure or taking a less conventional path. National Outdoor Leadership School (NOLS) instructor and Dartmouth admissions staff member Colleen Wearn (2016) describes her experience of this trend:

Midway through leading a backpacking expedition composed of 15 college freshmen, I asked Claire — the nervous student designated to lead the day's hike — if she had ever failed. At anything, ever. She furrowed her brow and then shook her head. She

could not think of a single time. Claire made the varsity volleyball team as a freshman, got straight As, earned a full ride to the University of North Carolina. She was successful by all traditional metrics, but still unsteady, unconfident. I see students like this on every NOLS course I teach, and I worry that we are raising a generation of Claires: students who are wonderfully accomplished and terrified to fail.

In the case of this specific student, Wearn goes on to describe how the student gained more confidence and capacity to overcome challenging situations over the course of their wilderness program; however, not all young people have this opportunity and a one month wilderness program is not a magic remedy for unhealthy patterns in society. Today's academic and external pressures are crippling rather than inspiring, and this does not serve the healthy development of young people.

Given the challenges faced by underprivileged children and youth, and the recognized long-term impact of traumatic childhood experiences (see Chapter 2), it might be a natural step to assume that this is the population which faces some of the greatest pressures in adolescence. Yet Dan Kindlon, professor of child psychology, in his research identifies disproportionate levels of high anxiety and depression among wealthy students (Tough, 2012). This may be attributed to a variety of factors, but one potential factor is the high pressures put on these students to 'succeed' according to external definitions of wealth and power. While less privileged students face other immense challenges, in some ways perhaps they are forced to develop greater coping mechanisms and to prioritize realistic success.

Whether stress is caused by academic pressures or socio-economic challenges, it has a negative effect on developing adolescents. As discussed in Chapter 2, the hypothalamic-pituitary-adrenal (HPA) stress response system is well-adapted for humans evading a lion attack in the savannah, but not for dealing with the stress of ongoing worries (Tough, 2012). Persistent stress caused by modern problems such mortgages and high pressure jobs, or academic stress and social pressures in the case of adolescents can produce long term negative effects which have a physical, psychological, and neurological impact on individuals. Interestingly – and disconcertingly – the part of the brain affected most by stress is the prefrontal cortex, which is

critical in both emotional and cognitive self-regulation (Tough, 2012) and is particularly vulnerable in adolescents. Chronically high levels of cortisol caused by stress have been associated with both short term problems such as increased aggression, impulsivity and loss of short term memory, and long-term consequences such as cardiovascular disease (Jensen, 2015) Thus the stress and anxiety that can be caused by academic expectations and external pressures today may have a more lasting negative impact on adolescents.

Decreased unstructured free time

The Gallup World Poll and a variety of national surveys identify the two main situational factors contributing to happiness as physical health and social contact. While we may not always have direct impact over our health (though we certainly can have some influence), how we choose to use our time is one of the few areas over which people have some control (Kahneman, 2011). Children and adolescents today have increasingly less opportunities for unstructured play where they can develop a sense of self, awareness of the world, and critical life skills that will serve them throughout their lives. In the fifteen year time span between 1981 and 1997, children's free playtime dropped by 25% – a change which appears to be driven by the increase in the amount of time children spend in structured activities (Burdette et al, 2005). With increased structured activities and less free time, it follows that young people have less opportunity to engage in unstructured activities or free time. Be it due to structured activities or perceived social pressures such as hours spent communicating online, this change has the potential to impact both happiness and self-perception. This is not to say the involvement in structured activities is negative – meaningful engagement in sports, arts, community service or other activities can all be immensely positive experiences. In fact, structured social activities and regular shared family activities have been correlated with decreased behavioural problems (Hofferth). However, in excess, over-scheduled calendars can have detrimental effects on young people (or anyone for that matter).

The documentary *Race to Nowhere* (2010) examines the experiences of young people who "have been pushed to the brink by over-scheduling, over-testing and the relentless pressure to achieve," and the immense cost to their physical, emotional and mental wellbeing.

While most parents, teachers or principals do not intentionally seek to create such a stressful atmosphere, they are products of their environment and do not necessarily have the foresight and courage to speak out against unhealthy levels of stress, unrealistic expectations or external pressures to perform on standardized tests that may have little pedagogical benefit.

Beyond impact on happiness and stress levels, there are further potential developmental costs to inadequate free time. Downtime or perhaps even being a little bit bored is when we process the big and small complexities of life and when key moments of creativity can strike. When attention is focused inward through daydreaming and letting the mind wander, a "default mode" of neural processing is triggered which is required for basic psychological functioning, mental health and cognitive abilities (Immordino-Yang et al, 2012). Excessive focus on external stimuli hinders this state of mind and thus can affect mental health and processing abilities. Given the structured, busy schedules of many young people it is unlikely they have sufficient opportunity to experience neural processing that occurs during downtime.

A further peril of decreased unstructured time is that young people have fewer opportunities to develop and exercise their judgment and then learn from these experiences. Staley (1988) states that "all children make mistakes. However, how the adults handle those mistakes reflects their moral value and helps the youngsters develop character" (p. 81). With more closely managed schedules and supervised activities, today's young people have fewer opportunities to make manageable mistakes and develop the character and capacity to face the complexities of life. In his book *How children succeed: Grit, curiosity, and the hidden power of character*, Tough interviews a teacher at an elite private school who says that: "What kids need more than anything is a little hardship; some challenge, some deprivation they can overcome, even if just to prove to themselves that they can" (Tough, 2012, p. 84). The teacher goes on to say that: "The problem is that the best way for a young person to build character is to attempt something where there is a real and serious possibility of failure." Whether in starting a new business or attempting a tricky slap shot in a hockey game, greater risk brings a high chance of defeat but also higher chance of "real and original success" (Tough, 2012, p. 85). Contrary to

the conservative and cautious approach to risk which is fostered in many educational institutions, some sectors such as the high tech industry in Silicon Valley actively promotes taking risks. Entrepreneurs recognize the need to take risks and learn from failures – ideally often and efficiently – as part of learning and developing as an individual or organisation (Saxenian, 1996). While some sectors have tapped into the value of failure such as Silicon Valley with its "fail fast, fail often, fail cheap (or early)" mantra, much of North American education system and society still perceives failure as something to avoid rather than a meaningful learning opportunity.

In summary, decreased unscheduled time impacts our ability to daydream, truly think our own thoughts and perhaps even be bored in order to arrive at new and original ideas. Adolescence is the time when young people first reach the developmental stage where they can form and become aware of their independent thoughts. Staley (1988) states that at age 16 adolescents begin to be able to listen and respond to inner thought process. If there is insufficient opportunity to develop the ability to think freely and trust their findings, adolescents will enter the world without a sense of self and drift towards whatever ideology or strong voice promises guidance. Turkle (2015) observes that "If we can't find our own centre, we lose confidence in what we have to offer to others" (p. 10). If Joan of Arc had not been daydreaming in her father's garden but had been Snapchatting with her friends or attending Kumon math tutoring, perhaps she might have missed the voices that inspired her to lead the French army against their English oppressors.

The single-minded attention of children and adolescents is a prized commodity not only to educators. Companies recognize that by investing in forming habits in young people, they can form lifelong dedicated consumers, thus it is no surprise that the free time of children and adolescents' is at risk given that their time, attention and money is a valuable commodity. Griffiths (2014) observes that: "Until recently, play has been an activity rather than a product" (p. 98-99), whereas today children in the US spend an average $101 each week on 'playing'. With the advent of play as a commercial product with financial considerations rather than a non-monetized activity which promotes personal development and social interconnectedness,

these further elements contribute to making unstructured time an endangered commodity for young people.

Meaningful structure in life can be useful and reassuring if it is developmentally appropriate, loving and also has space for spontaneity. Many young people would benefit from more structure as a tool to simplify life and create space for reflection, inner and outer calm. However, structure and busy schedules are reaching unmatched levels in the lives of many young people in North America. Regular periods of unstructured time are important for individuals of all ages, and particularly young people, to reflect and rejuvenate and learn lessons which cannot always be contained in specific measurable units. With increasingly structured and scheduled lives, the importance of meaningful opportunities for unstructured time become even more critical.

Technology

Whether embraced or feared, the face of technology has changed greatly in the past decades. In some ways, new forms of technology bring young people the opportunity for greater interconnectedness and awareness of information from around the world. Yet these technologies can also lead to a disconnection from self, reality and community. How we communicate has changed incredibly since the advent of the internet and smartphones. Handwritten letters – for centuries a common form of communication – now cannot even be deciphered by many young people who no longer learn cursive in school. Even while we forget certain skills, the accessibility of smart phones has eased many aspects of our lives. For better or worse, our choice of how to use these tools has had an impact on skills formerly taken for granted such as navigation, memorizing commonly used phone numbers or engaging in face to face conversations. The pervasive presence of screens and technology in our lives has also changed our attention spans and how we interact with the word. From 1965 to 1995, "the average soundbite on American television imploded from forty-two to 8 seconds" (Homer-Dixon, 2000, p. 322), and the trend appears to be continuing in this direction. Whereas once we communicated through lengthy handwritten missives, today even email and Facebook are seen as passé by adolescents who prefer to communicate through brief images and words such as

Snapchat. There is value in different forms of conversation and communication, but anytime we move to one extreme we risk the loss of meaningful knowledge and skills.

Given adolescents' natural gravitation towards novel sensations (see Chapter 2), it comes as no surprise that technology is a natural draw for young people. Whether the ping of a new text or the thrill of reaching the next level in a game, technology can provide an endless source of rewarding sensations and perceived sense of belonging – all elements craved by adolescents. Yet if this use of technology is not balanced by real-life interactions and experiences, it forms a poor substitute for the developmental needs and milestones of adolescence. In excess, our dependence on technology can interfere with authentic interactions and experiences, and cause harm to the developing adolescent. In the last decade and a half, Internet addiction has been recognised to impair academic, social, and emotional functioning and has been included in the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (Kuss, 2015). To varying degrees, all of us have likely experienced the pleasurable rush of dopamine that can come with new texts or posts, and perhaps have checked our various accounts more than we care to admit. In adolescents, particularly if they have not had the opportunity to develop balancing forces in their lives, the forceful presence of technology can be overwhelming.

While technology opens the door for many opportunities, it can also create a pervasive venue for negative behaviour such as bullying and can cause social isolation, both of which is are obvious stressors for teens (Jensen, 2015). Without guidance in developing respectful and compassionate behaviour towards others, technology can exacerbate problems because it hides them from the adults who might otherwise have the insight and perspective to redirect negative behaviour.

Sleep, a particularly precious commodity for adolescents, is another area influenced by technology. According to one study on the relationship between screen use and sleep, just a 2 hour exposure to self-lit screens decreases melatonin by about 22% (Wood et al, 2013). Teenagers are particularly susceptible to consequences of sleep deprivation (Jensen, 2015), yet most teens spend far more than two hours in front of screens most evenings. As a teacher I

regularly hear of students sending each other texts in the early hours of the morning or playing online games for hours every night, yet many parents are unaware that their adolescent isn't sleeping sweetly or feel they don't have the authority to take action. Parents do not always have the skills or insight to intervene. In one case, a baffled student told me about how her mother would sneak in at night (thinking her daughter was sleeping) to take her iPad rather than address her daughter's use of technology directly. A few missing minutes of sleep may seem trivial, but the cumulative effects of technology use and constant connection can have a strong impact on sleep in adolescents. Sleep disturbances are correlated with less physical activity, high obesity, suicidal thoughts, and even violent crimes (Jensen, 2015), and thus it is concerning that technology may in many cases be hindering healthy sleep patterns in adolescents.

Beyond affecting biological needs such as sleep, technology also has a direct impact on social interactions and how we communicate with each other. Sociologist, psychologist and MIT professor Sherry Turkle (2015) has spent decades exploring the shifting social norms around conversation and human interaction. She observes that it can takes a lot of risk to engage in face to face conversation where our emotions and true selves are at their most vulnerable. Turkle observes that relegating social interactions to online forms such as social media "means you can always leave" (p. 140), thus making individuals less responsible for the impact of their actions. Turkle further describes interviews held with students between 2008 and 2010 where they share their view that the back-and-forth of unrehearsed "real-time" conversation makes one "unnecessarily" vulnerable." (p. 143). The average teen in the US sends 3,300 texts a month in (Jensen, 2015), making this a substantial part of their daily activities, even if the quantity of texts does not necessarily speak to the quality of the interaction or relationships they are learning to develop.

One challenge of technology and social media is that it can create a predefined and less flexible sense of self. Turkle (2015) gives the example of a master's degree student who blogged regularly, and tried to conform to a certain brand and identity, which ultimately discouraged risk taking and creativity. When the student decided to pursue writing and research in private

without ongoing blog updates, this change was accompanied by a greater sense of curiosity, creativity and freedom. Turkle argues that: "People who use social media are less willing to share their opinions if their followers and friends might disagree with them. People need private space to develop their ideas" (p. 310). At an age where young people are still gaining a sense of self and hopefully changing in positive ways, it is limiting for adolescents to be confined by perceived expectations and norms. Staley (1988) observes that "for the adolescent, belonging to a group is extremely important and causes great anxiety" (p. 97). With the constant perceived surveillance and presence of external opinion through social media, it takes a remarkably strong individual to go against these expectations and show vulnerability by growing and changing.

At its best, technology can offer unprecedented ease of access to information and useful tools. At its worst, technology can genuinely hold individuals back from developing their potential and can worsen pre-existing problems between individuals or in a community. While our relationship with technology is varied, it is indisputable that its presence, proliferation and long term impacts present uncharted territory for today's adolescents.

Decreased levels of empathy and greater individualism

Over the past generation, a number of researchers observed that society in North America has been shifting from community-oriented to individualistic. In the past much of life was defined by service to family, community, church or country, whereas today much energy and effort is put into seeking individual fulfilment and happiness. Sociologist David Riesman identifies these two styles of living as an other-directed life and an inner directed life. With an outer-directed life, worth is measured by what friends and neighbours think of you and whether you have what they have; whereas with an inner directed point of view individual choices are measured against a personal standard (Wilkinson, 2015). Polls of young people today indicate a greater emphasis placed on extrinsic values such as wealth and fame rather than intrinsic values such as community and civic engagement (Twenge et al, 2012). Dan Kindlon, a Harvard child psychologist, notes that in 1972, the most popular reason freshmen gave for enrolling in college was develop a meaningful philosophy of life whereas today the

most popular reason is to become very well-off financially (Kindlon, 2011). Through a variety of factors, motivations and values have shifted over the past generation.

In a cross-temporal meta-analysis, Konrath (2010) examined self-reported levels in empathy in college students from 1980 to 2010, and noted that almost 75% of students in 2010 rated themselves as less empathetic than the average student 30 years ago. The causes of these changes were unclear, but Konrath speculated that possible factors might be increased social isolation – never before in North American history have so many individuals lived alone – or perhaps even changes in reading habits which may influence levels of empathy and ability to relate with others. While these shifts may seem alarming, it would be false to blame young people for these changes. Twenge (2014) observes that: "Young people today are the product of their culture – a culture that teaches them the primacy of the individual at virtually every step" (p. 11). At a time in history where material wealth, fame and power are glorified over compassion, service and humility, it is not surprising that young people would seek to emulate these messages and the role models which surround them.

While young people in some ways are more connected to the world than ever before, in many ways they are less connected to their immediate community. An engaged Grade 6 can likely tell you about polar bears in risk of extinction or famine in Africa, but due to declining community structures may never have had the opportunity to engage with local social justice issues, help a neighbour carry in their groceries or volunteer at a church dinner. Turkle (2015) speaks of how much of communication between young people today is in a 'broadcasting' form rather than a receptive or empathetic form and how they have "lost practice in the empathic arts – learning to make eye contact, to listen and to attend to others" (p. 7). Neurobiologist Dan Siegel's research indicates that children need eye contact to develop parts of brain involved with attachment. If this attachment is lacking, it leads to problems with empathy and self-regulation. He observes that how caregivers communicate with infants "during these crucial early years may help shape the right hemisphere's capacity for self-regulation, self-other relationships, an autobiographical sense of self, and the basic elements of the capacity for mindsight" (Siegel, 2001). Researchers found that "some socioemotional skills may be

vulnerable to disruption by environmental distraction, for example, from certain educational practices or overuse of social media" (Immordino-Yang et al, 2012). While we cannot blame Facebook for decreased levels of empathy, the combination of all these factors does cause a measurable shift in how young people interact with the world compared to previous generations.

If nothing else, it is reassuring to note that empathy is such an ingrained trait in human beings that with the right environment and support it can reawaken. Turkle (2015) describes a study which showed that "after only five days at a summer camp that bans electronic devices, children showed an increased capacity for empathy as measured by their ability to identify the feelings of others by looking at photographs and videos of people's faces" (p. 11). We would likely all benefit from spending more time interacting consciously with each other rather than hiding ourselves behind the self-imposed security of screens.

Staley (1998) observes that "adolescents seek a dialogue between themselves and the world" (p. 92); yet in our current society there are not always sufficient opportunities or guidance for young people to engage in meaningful dialogue with each other and the world. Some of this shift may be attributed to increased reliance on technology, but far more powerful are the underlying values that dictate how we choose to live our lives, spend our time, resources and energy. If much of these are directed towards extrinsic goals and rewards, it is no wonder that young people also are influenced in these directions – until perhaps one day there is a rebellion against excess individualism and a rekindled interest in communal living and service to others.

On several occasions I have spoken with Waldorf middle school students, who arguably have had a richer and more diverse educational experience than many young people, about their long term goals in life. Many told me their greatest dream is to become YouTube sensations or to be rich and famous; thus living up to the exact stereotypes ascribed to their generation. Yet many also have deep empathy and compassion for others, in some cases volunteering their time, organising initiatives to help local or international humanitarian efforts, and – most tellingly perhaps – regularly acting towards others with empathy and

thoughtfulness. As educators looking towards the future, we can seek to nourish and strengthen this impulse rather than let ourselves be swayed by contrary forces.

Child-centred quest for happiness

Understandably, parents are driven by love and compassion to protect their offspring from possible hardship. However, too much intervention sends the message that young people are perceived as incapable of dealing with challenges or hardships themselves. In some cases, even though these interventions come from the best intentions, they can raise levels of anxiety and fear in children who are naturally susceptible to the underlying messages around them.

Based on trends observed in her career and interviews with other professionals, therapist Lori Gottlieb (2011) argues that many parents are too focused on making their children happy, ultimately with negative effects for both themselves and their offspring. She references an interview with psychiatrist Paul Bohn who "believes many parents will do anything to avoid having their kids experience even mild discomfort, anxiety, or disappointment – with the result that when, as adults, they experience the normal frustrations of life, they think something must be terribly wrong" (p. 64). Such unrealistic and impossible expectations do not serve young people. Rather than seek to prevent all possible problems, "parents simply need to accept that teenagers want the impossible from their parents" (Staley, 1988, p. 105); they seek both loving support but also the freedom to experience life independently – a difficult and ever-changing balancing act.

While experts on parenting will likely continue to disagree about almost everything under the sun, researchers have found a few trends of note. Authoritative parenting which includes both high warmth and high control has been found most associated with adaptive and competent child functioning such as mature moral reasoning, prosocial behaviour, high self-esteem, peer acceptance, and academic achievement (Gielen, 2004). In contrast, permissive (high warmth, low control), authoritarian (low warmth, high control) and uninvolved parenting (low warmth, low control) have less positive outcomes. Protecting children from the consequences of their actions also does not help young people feel prepared for life. Staley

(1988) observes that "if parents focus on protecting the youngster from punishment, they often do a disservice to their children" (p. 81). Rather, one can seek to incrementally increase opportunities for risk and reward in such a way that young people have a greater possibility of being prepared.

Some parents seek to give their children every opportunity in life, right down to letting their two-year old choose between twenty different flavours of yogurt in the grocery store aisle. Yet this endless stream of choice and decisions can be crippling and overwhelming, forcing us to continually direct energy towards something that does not serve us or others. In his book *The Paradox of Choice: How the Culture of Abundance Robs Us of Satisfaction*, social theorist Barry Schwartz explores how too much choice makes people more likely to feel depressed and out of control. Rates of depression in the year 2000 were about ten times as likely as depression in the year 1900 (Schwartz, 2004), and Schwartz argues that this can be attributed in part to the incredible glut of choices that overwhelm us rather than bring us joy. In an interview with Lori Gottlieb (2011) he states that: "Happiness as a byproduct of living your life is a great thing – but happiness as a goal is a recipe for disaster." Today's adolescents face tremendous and at times unrealistic pressure to be happy and do not always have the opportunity to build up the internal resilience and intrinsic motivation to face hardships.

Helicopter parents

Much has been written about the supposed new trend of "helicopter" parents who are "always hovering, ready to swoop in for the rescue, but not necessarily making emotional connections with their kids or even spending time with their kids" (Tough, 2012, p. 81). While a variety of articles in popular magazines and journals bemoan the proliferation of helicopter parenting, some experts seek to differentiate between diverse styles of involved parenting.

In his 2014 book *The myth of the spoiled child: Challenging the conventional wisdom about children and parenting*, Alfie Kohn explores this trend in depth. He claims that the concept of helicopter parents is somewhat of a myth, but that focus on happiness rather than building capacities does seem to be a shift in contemporary parenting. Kohn states that: "a

review of forty-seven studies concluded that childhood anxiety seemed to be associated with a variety of parent styles: rejection or withdrawal, hostility or over-involvement" (2014, p. 60). Kohn notes that parental engagement is positive, particularly when it seeks to support their children's development and autonomy rather than seeking behavioural and psychological control, which are both destructive. This supports the findings discussed earlier that authoritative parenting which includes high warmth and high levels of involvement is most associated with positive outcomes such as inner confidence, strong moral reasoning and academic achievement (Gielen, p. 65). These findings somewhat contradict the popular assumption that young people are spoiled and utterly dependent on their parents. Perhaps more research is required into the difference between positive levels of engagement and over-involved or anxiety-inducing levels of engagement.

As educators we regularly see parents who are actively involved yet also supporting the growing autonomy of their children, while other parents seek to micromanage every little aspect of their offspring's lives, which does not contribute to happiness or independence for either party. Kohn makes a case for active involvement with children into young adulthood, arguing that this leads to positive outcomes such as higher levels of academic achievement and decreased likelihood to engage in binge drinking (Kohn, 2014). Meaningful relationships, established expectations and a sense of responsibility towards others as well as self can certainly help carry adolescents through the times in their lives where impulse may override judgment. At a time when many young people are suffering from anxiety, Kohn (2014) argues that the "lowest levels of anxiety are found among children whose parents actively supported their autonomy" (p. 60).. While parents today spend far more time parenting than even just a generation ago, much of this time is spent rushing to and from scheduled activities, or in a distracted state. Perhaps as we strive to aim for quality interactions rather than quantity, these positive engagements will support young people in their development.

Mental illness

Many researchers, educators and experts have observed that rates of mental illness in adolescents (and adults) in North America appear to be increasing. The causes of these changes

are not immediately clear – possible factors include more diligent diagnoses and improved access to healthcare, the increased stress and stimuli of modern life, a decrease in traditional support networks such as extended family and religious communities, or increased prevalence of contaminants such as heavy metals which can cause neuropsychiatric disturbances. Some argue that the vested interest of pharmaceutical companies encourages the identification of disorders for what may simply be part of the human experience, in some cases developing and promoting medication that is no more effective than placebos. (Antonuccio et al, 2002). Less measurable but perhaps equally relevant are our shifting values and the social constructivism that seeks to define our views of normalcy.

Since the development of the DSM-1 (actively funded by eager drug companies), the number of diagnostic categories has more than tripled and in some cases includes "disorders" with vague characteristics such as periods of sadness or ongoing shyness which may simply be part of the human experience (Rogers et al, 2014). A number of professional organisations such as the Society of Humanistic Psychologists question the definitions presented by the American Psychiatric Association in the DSM; however, its impact remains widespread. Today mental disorders account for nearly half of the total disease burden in the US according to World Health Organization (Jensen, 2015), and are correlated with higher rates of incarceration, addiction, and can limit opportunities to live a rewarding, joyful life.

While much could be written about the history and sociology of psychology and psychiatry, the fact remains that at this time in North America rates of mental health disorders are at an unprecedented high. Severe mental health disorders are more common in adolescents than asthma or diabetes and suicide is one of the leading causes of death among adolescents (Jensen, 2015). In the past, people obviously faced great hardships – famine, plagues, violence, and more – yet perhaps found support in the form of deep-seated religious beliefs, strong community ties and ongoing connection to the cycles of the natural world. Changes in our worldview and social order mean that today people are often more likely to turn to pharmaceutical aids rather than call upon spiritual forces or seek strength from community or the natural world. Prescription of antidepressants has increased almost 400% from the late

1980s to 2008 (Pratt et al, 2011), a disconcerting finding given that some studies find no difference in the success rates of antidepressants over placebos, and some even are correlated with higher rates of suicide (Escudero et al, 2015). Clearly medication alone is not a sufficient answer to the rising rates of mental illness in North America.

Given these changes in mental health, what are some corresponding changes that have happened in North American society during this time period? Stress is one of the main risk factors for a variety of mood and anxiety disorders as it causes greater than normal release of cortisol into the brain (Jensen, 2015), and one might argue that levels of stress have indeed risen among adolescents and adults. If we can seek to make decisions that mitigate the level of stress in daily life and promote the development of tools to manage stress, perhaps this can have an impact on rates of mental illness and overall wellbeing.

Chapter 5 – Healthy Risk

Why is risk important?

Sensation-seeking is built into the teenage brain and each novel sensation gives adolescents the positive rush of a dopamine reward. While teenagers' reasoning skills are developed and in many ways quite capable (Jensen, 2015), this neurochemistry means they are inextricably drawn to new sensations. As educators and people working with adolescents, we must provide healthy opportunities to seek new sensations. If we fail to provide these opportunities and do not support healthy risk taking, the developmental needs of adolescents will cause young people to seek out risks in other and potentially more negative contexts. Griffiths (2014) observes that: "Children need accidents – little ones, ideally, accidents the right size, through which they learn to avoid bigger accidents later" (p. 67). How and when to provide these opportunities becomes a challenge in a society which at times is more concerned with liability than the developmental needs of children.

Benefits of healthy risk

Taking incremental risks and seeking new experiences is how we learn about the world. Each new step we take, each new word we say, each new food we taste brings us novel sensations and fresh information. With these new experiences comes the potential risk that we might fall down, look awkward, or eat something we don't like. Jensen (2015) observes that "evolutionarily, adaptive risk-taking and adventure seeking has long term benefits but short term risks" (p. 104). Throughout much of history, these short term risks were somewhat mitigated by being in a familiar environment with a supportive community. Yes, hunter gatherer teenagers likely participated in some shenanigans, but by adolescence their knowledge of the environment and its potential dangers would have been substantial. Today there is a different range of potential risks which can be accessed quite easily but have no prior context. With little to no prior knowledge or context, a young person can encounter illegal substances, internet predators or jump on a plane and travel abroad to a completely foreign

environment – and promptly be faced with decisions which require good judgment and may have serious consequences.

German psychologist Dietrich Dorner researched experiments on social risks and noted that few people are able to understand and predict the long-term consequences. He found that "successful participants seem to take small, reversible steps or to see the full set of effects at once, and thus protect themselves against major blunders" (Sunstein, 2004, p. 2). To prepare adolescents for the risks they will inevitably encounter (both due to their predisposition for risk and due to the inexorable unpredictability of life), we must give them opportunities to learn how to take these small, reversible steps. This process can start early with something as simple as experimenting with building blocks or trying to invent a new imaginative game in preschool, but it requires the freedom to make choices, experience the consequences and have the foresight to apply this new information to comparable situations in the future.

Taking risks is an integral part of adolescence, yet at times the courage to take a risk can prevent worse outcomes. In his book *Deep Waters* (2002)*,* writer and adventurer James Raffan explores the Timiskaming Lake tragedy; a canoeing disaster which left 13 campers dead. He argues that with better preparation, understanding of the conditions and willingness to be flexible and speak up against the original plan, this disaster could have been prevented. While "implicit in growing up is the need to take risk from parental influence to a life of one's own" (Raffan, 2002, p. 2), in this case the adolescents grew up in such a rigid and hierarchical boarding school structure that they perhaps had less opportunity than ideal to develop their own capacity for judgment. The ability to take an informed risk – whether by the campers or adults – could have prevented a tragedy which, ironically, had a broad ripple effect across the outdoor education world and prevented generations of future adolescents from participating in school-based adventure learning.

Resilience is a learned skill, and since teenagers brains are primed for learning they have a better chance than adults to develop this skill. While there will always be unpredictable variables in life, adolescents can learn the fundamentals that help them take control and manage their life. This can include elements as basic as ~~such as~~ taking care of themselves

physically, eating well and getting enough sleep, setting goals and working towards them, and making choices to connect with people face to face rather than through more superficial means. By being supported to develop these habits, adolescents can have a foundation that will enable them to draw on more inner strength and resilience when needed.

Executive function, self-regulation skills and sense of mastery over life circumstances

As young children, we have no filter in our emotions or actions – we scream if we are upset, take the toys we want, and laugh joyfully if we are happy. As we grow up, we gradually learn to manage these emotions and filter them in socially appropriate ways – sometimes perhaps too much so. The ability to deal with confusing and unpredictable situations and diverse information requires a combination of cognitive and emotional impulse control (Tough, 2012), skills which in part come with maturity and in part with regular use and practice. The more we are aware of our responses and the more we can manage them, the greater the likelihood that we can work productively with others and overcome interpersonal challenges. Psychology professor Steinberg (2014) claims that "the capacity for self-regulation is probably the single most important contributor to achievement, mental health and social success" (Steinberg, 2014, (p. 16). Thus it stands to reason that helping young people develop self-regulation and executive functioning skills is a worthwhile goal for anyone working with adolescents.

Promoting self-regulation skills must be done in consideration with age-appropriate child development. Expecting an infant to develop executive functioning skills by exposing them to increased hardship to increase their resilience is somewhat absurd. According to attachment theory, babies whose parents responded sensitively to them when they were young and needy later became more independent, intrepid and self-reliant (Tough, 2012). Thus if we are seeking to develop executive functioning in adolescents later in life, we should seek to care as compassionately as possible for them in their early years when their outlook on life and trust in the world is being developed.

Swedish psychologist K. Anders Ericsson theorizes that it takes ten thousand hours of deliberate practice to truly master something; a concept later popularized by Malcolm Gladwell's book *Outliers* (2008)*.* If young people are to have the opportunity to develop executive function, self-regulation skills and sense of mastery over life circumstances, they need a strong foundation as children and subsequent continual opportunities to practice these skills in every facet of life – at home, at school and in their free time. Our current educational system and those who work with adolescents would benefit from taking into account the importance of having the freedom to develop these critical life skills.

Resilience in the face of challenge or failure

Contradictory as it may seem, many of the people who we now deem to be great successes also experienced great failures in their life. Albert Einstein's teachers said he would never amount to much, Steve Jobs was fired from the company he started, and Michael Jordan didn't make the cut for his basketball team. Ironically while the value of resilience is becoming more recognised, there is still a hesitancy to let young people experience the failure and challenges that help build resilience. In his 2015 book *David and Goliath: Underdogs, Misfits, and the Art of Battling Giants*., Malcolm Gladwell describes the story of investment banker Gary Cohn who as a young man took the chance of jumping into a cab with high level options trader and talked his way into a job. Cohn attributes his ability to deal with possible failure (and his success from taking these risks) in part to his dyslexia, because by the time people with dyslexia "get out of college, our ability to deal with failure is highly developed" (Gladwell, 2015, p. 123). Whether on the stock market, tackling a difficult ski jump, or asking someone on a date – "risk and reward are inextricably linked" (Jensen, 2015, p. 109). By building the stepping stones that enable young people to gain a sense of this relationship, they are more likely to approach these decisions with perspective and to demonstrate resilience in the cases where situations may not go as planned.

Young people who have had the opportunity to take small, age-appropriate risks – maybe just something as small as balancing over a fallen log or jumping off a boulder – are more likely to have the inner self-regulation that is part of resilience. Free unstructured play

(see Chapter 4) is one of the most efficacious contexts for developing this self-regulation. Tough (2012, Introduction) observes that "extended, complex make-believe scenarios (….) naturally teach children how to follow rules and regulate impulses" – far more so than structured environments with predictable outcomes; yet increasingly young people are removed from these rich learning opportunities in the interest of progress and academic success.

Daniel Siegel likens the teenage brain's quest for novelty to the powerful push of a waterfall – we cannot try to stop it, but we can seek to direct its course and harness its power (Siegel, 2013, p. 16-16), just as the creative power of the teenage brain can be harnessed to move towards independence in a positive way. With adolescents' brains that are neurologically hypersensitive to dopamine, they are inevitably more drawn to short term rewards versus larger, delayed rewards (Jensen, 2015, p. 111). This can have positive outcomes in situations that require a quick response, but a predictor of long-term success is the ability to delay gratification. Individuals who have the tendency to follow through on a plan and have the ability to persist at a boring and unrewarding task are more likely to see long-term rewards. This psychological trait is perhaps most famously measures by the so-called "marshmallow test" developed in the 1960s by professor of psychology Walter Mischel. Children participating in this study were given the option of having one marshmallow now or two marshmallows fifteen minutes later, and researchers found a striking correlation between ability to wait and later academic success (Tough, 2012, p. 62). Of course, the ability to wait and have confidence in positive outcomes also may say more about the stability and predictability of a child's upbringing rather than their inherent character traits, but it is an interesting idea to ponder nonetheless. While the ability to delay gratification tends to make people more successful in life in general, it also reduces the likelihood of negative outcomes such as obesity or addiction (Steinberg, 2014, p. 108). Given that in the 21st century school may seem endless to young people and it may take decades for tangible positive rewards (other than the superficial recognition of good marks) to come out of traditional schooling, the importance of delayed gratification is even more relevant today.

While teenagers' sensitivity to dopamine rewards means they are primed for learning, their natural tendency to want the metaphorical marshmallow immediately also comes with a cost. Adolescents between 12 and 24 are three times more likely to die due to accidents or other risky behaviors (Siegel, 2013, p. 22). This predilection also means adolescents are more prone to addictions (Jensen, 2015, p. 117). However, these risks can be counteracted to some degree by developing executive functioning and self-regulation, and the ability to see the long-term positive outcome of making choices like not driving recklessly. Siegel (2013, p. 71) states that helping teenagers develop their intuition and connection to heartfelt values plays an important role in balancing their tendency to be hyper-rational and focused on immediate reward.

Adolescence is not the most ideal time to begin experimenting with risks. Instead of playing with tricycles, Lego blocks or muddy creeks, young adults are more likely to be making potentially high consequence decisions involving motorized vehicles, possible careers, illegal substances, or relationships. The importance of prior opportunities to develop good judgment regarding risks cannot be overemphasised. Adolescents who have never had the opportunity to experience negative consequences are more likely to continue reckless behaviour to seek out the gratification of dopamine rewards (Jensen, 2015, p. 108). This builds on the importance of letting young adults experience the consequences of their actions (See Chapter ***). While we cannot directly teach resilience or good judgment, if we seek to develop these skills early there is a greater chance that adolescents will demonstrate good judgment. According to the cognitive hypothesis, success depends upon cognitive skills and the best way to develop these skills is to begin as early as possible (Tough, 2012, Introduction). Educators who have worked with children of different ages recognize that these expectations also need to be developmentally appropriate and meet the needs of each specific age. By supporting developing adolescents in their journey to developing good judgment and self-regulation skills, we can support their resilience and long-term success in the face of challenge.

Well-being and flow

If we are fortunate, at some point in our lives we have experienced the joy that comes from successfully tackling a challenging task, from taking a calculated risk, throwing our heart and skills into an all-consuming project, and coming out successfully and stronger at the end. For different people this may take different forms: performing a challenging concerto, tackling a new ski jump, mountain biking along demanding trails, or thinking on our feet in an emergency situation and taking action to help others. Psychologist Mihaly Csikszentmihalyi describes these highly focused, all absorbing moments of psychological concentration as "flow experiences." Tough (2012, p. 136) refers to this as a "feeling of intense well-being and control" felt by chess experts, mountain climbers, and professionally trained dancers. For true flow to happen, the skill of the individual must be matched with the difficulty of the task – if something is too easy or too hard, we will be bored or feel overwhelmed. Inspired by intrinsic motivation rather than external forces, these moments of flow generate tremendous feelings of well-being and the quiet satisfaction of being in control and inner balance in challenging, stimulating environments (Csikszentmihalyi, 2014). Thus what may be perceived as a risky or at least rather challenging activities can also have immense benefits both in immediate happiness and long-term success – if the individual has prepared and built up towards being prepared for these situations.

In the context of education, the concept of flow is valuable for informing how we approach the creation and implementation of meaningful learning experiences. Of course, realistically there will be times where lessons may be more on the repetitive and dull end of the spectrum; however, if we are to engage young people and make the most of their ability to learn through new sensations and experiences, we would do well to consider how optimal experiences of flow can be incorporated into our daily lives.

Chapter 6 – The Cost of Insufficient Risk

Undervaluing and Misinterpreting Risk

As discussed earlier in this paper in Chapter 3, humans generally have a remarkably poor ability to predict and manage risk. Accurate data and a methodical approach can mitigate these weaknesses, but we are still inherently influenced by the emotions created by inner or outer images of dramatic one-time events. As Sunstein states (2004): "People show a disproportionate fear of risks that seem unfamiliar and hard to control" (p. 50) and this is why we are more worried about unlikely events like terrorism or killer bees, and don't worry as much about more common risks such as diabetes and car crashes. This same dichotomy influences how we perceive risk in childhood and adolescence, and as certain norms change – such as riding a bike to the park without parental supervision – our emotional reaction to this unfamiliar but quite harmless activity becomes even stronger.

Our perception of risk is further influenced by our emotional evaluation of certain activities. Some activities such as driving cars, playing football and rugby, or downhill skiing are – for many individuals – perfectly accepted norms. Even though these activities have potential risks such as death, head injuries and broken limbs, we often even encourage young people to pursue these activities because our culture sees them as beneficial. However, not everyone agrees with the benefits of these potentially risky activities; one scientist who studies doping commented: "I would prefer my child to take anabolic steroids and growth hormone than play rugby – I don't know of any cases of quadriplegia caused by growth hormone" (Gardner, 2008, p. 13). Without delving too deeply into the nuances of this statement, suffice it to say that risk is often misinterpreted and influenced by emotion rather than logic. Sunstein (2008) observes that people tend to think that risky activities have low benefits and that beneficial activities contain low risks, rarely think that something is risky and beneficial. Furthermore, our emotion-based decision-making tends towards shortcuts and absolutes, with people rarely taking the time to develop a more measured and perhaps less absolutist approach.

Insufficient opportunities for manageable risks have costly side effects for young people. These side effects include decreased opportunity to develop critical life skills such as executive function, self-regulation skills and sense of mastery over life circumstances (See Chapter 5). It also holds back individuals from achieving optimal "flow" experiences where they are performing successfully at the maximum potential – a state that brings both joy to the individual and potential benefits to broader society.

Lack of opportunity to develop these life skills, particularly in the face of the changing demands and increased stresses placed on many young people today (see Chapter 4), can have a variety of consequences including increased rates of mental illness such as anxiety and depression, and decreased internal locus of control. If an individual's internal locus of control is weak, the more likely they are to hold accountable external forces such as luck, fate or other people for their state of being. In contrast, if an individual has a strong internal locus of control then they will feel that they can have the power to take action regarding their physical, mental and emotional state, and this is correlated with strikingly lower stress levels even in the face of challenging circumstances (Lefcourt, 2013). In order to develop these key coping mechanisms, a certain amount of developmentally-appropriate risk is necessary so that young people can gain a sense of their own capacities.

Fear of potential dangers is a basic human trait and to some degree informs all our decisions. People understandably tend to be loss averse and will seek to avoid what they perceive as potential risks (Sunstein, 2008). However, our perception and reality do not always align. The major causes of death for youths are "accidents, homicide and suicide – causes are largely preventable and reflect the stresses young people experience during this stage of life" (Brown, 2002, p. 37). By promoting developmentally-appropriate opportunities to develop tools for facing stress, risk and uncertainty, young people can be better prepared for the complexities of life. Without sufficient opportunities to take these small but important risks, individuals may suffer more challenges in the long run.

Depression

Experiencing moments of happiness and sadness to varying degrees is a normal part of the human experience. Macro-historical professor Yuval Noah Harari (2014) argues that serotonin levels likely have remained fairly constant over the past centuries, if not millennia. He contrasts the example of a medieval French peasant coming home to his mud hut with the example of a wealthy Parisian banker coming home to his modern penthouse and argues that due to human biochemistry both likely experienced very comparable levels of happiness despite their vastly different realities. Yet while serotonin levels may be somewhat steady throughout human history, worldwide rates of depression have skyrocketed since the 1940s with the United States leading the charge; as other countries 'Americanize", their rates of depression increase accordingly (Lasn, 1999). Exposure to stressors early in life can lead to brain hyperactivity and increased risk of depression later in life (Heim, 2004), but this does not easily explain why a prosperous and relatively peaceful part of the world suffers from such high rates of mood disorders. Therefore it would seem that depression is not purely a biochemical process but due to the interplay of lifestyle, worldview, community support networks and other factors that cannot necessarily be pinpointed easily.

Today depression is the leading cause of disability in North America (Kessler, 2012), with 17% of individuals suffering from depression at some point in their lives (Center for Behavioral Health Statistics and Quality, 2015). It must be noted that these statistics are derived from interviews that do not include "people with no fixed household address (e.g., homeless or transient people not in shelters), active-duty military personnel, and residents of institutional group quarters, such as correctional facilities, nursing homes, mental institutions, and long-term hospitals," and thus one may extrapolate that the actual rates would be much higher if those populations were included in this survey. As discussed in Chapter 4, prescription of antidepressants has increased almost 400% from the late 1980s to 2008 (Pratt et al, 2011), yet these do not appear to be adequately addressing the underlying problems. Homer-Dixon (2000) argues that the rising incidence of depression and anxiety may be due to modern society

exceeding our adaptive abilities. This may to some degree explain the higher rates of depression found in more developed countries and may help us find ways to counteract these effects.

The medical profession does not (or cannot) always differentiate effectively between deep-seated neurobiological hindrances and feelings which are a normal, albeit difficult, part of the human spectrum of emotions. For many people, depression is not an illness but "a severe low mood that occurs when we harbor pessimistic beliefs about the causes of our setbacks" (Tough, 2012). In his book Learned Optimism (2011), professor of psychology Martin Seligman argues that pessimists tend to believe problems are permanent, personal and pervasive – views which create a sense of helplessness in the face of hardship. He argues that individuals can learn to develop habits and views which will increase their sense of empowerment to take meaningful action.

Adolescence is a period of time where real mental illnesses can emerge, as many of these involve the full functioning (or lack thereof) the frontal cortices (Jensen, 2015). The rise of earlier puberty in girls has been linked to depression and anxiety as these young women may feel overwhelmed or under supported in the face of external pressures and expectations (Steinberg, 2014) and between 20-30% of adolescents report at least one depressive episode (Jensen, 2015). However, given that malleability of the adolescent brain, this is also a time where individuals truly have the opportunity to develop new and positive habits that can serve them in the future. Tough (2012) claims that "the most fruitful time to transform pessimistic children into optimistic ones is before puberty but late enough in childhood that they are metacognitive (capable of thinking about thinking)" (p. 91). Whether learning to use positive self talk through formal cognitive behavioural therapy (CBT) or gaining opportunities to step outside of themselves through meaningful community service or learning opportunities, adolescents are at a stage in life where they can form habits and worldviews that will have an impact for the rest of their lives.

Anxiety

Adolescence is almost inevitably a time of increased stress, as teenagers seek to navigate the emotional, mental and physical changes and challenges that come with their shifting realities. As discussed in Chapter 2, teenagers are more susceptible to the negative effects of stress and these increased levels of cortisol can cause anxiety and a host of other difficulties. Stress and anxiety affect frontal lobes, which in turn affect executive functioning and integrative processes like using imagination and creativity to planning and taking action in a complex world (Homer-Dixon, 2000). Thus anxiety not only results in more stress – a truly problematic feedback loop – but also limits an individual's capacity to take action and change these circumstances.

Anxiety is a widespread concern in North American society. An estimated 30% of people will suffer from anxiety disorder at some point in their lives (Lebowitz, 2013). Compared to their counterparts around the world, anxiety and mental illness are particularly prevalent in adolescents in North America. A study comparing young people's mental health with that of their peers 75 years ago found that 5 times as many teenagers scored above the test's cut-off for serious psychological problems (Steinberg, 2014). In some cases, children are anxious in their parents' presence and less anxious when without their parents, demonstrating that children have their own coping abilities but are also susceptible to being exposed to an atmosphere of fear and anxiety. Child studies professor Lebowitz (2013) notes that "if a child fears a situation that is not actually dangerous, our protection becomes a liability of its own" (p. 127) and creates more anxiety in the long run. In such cases, active involvement from a parent or educator will only reaffirm the child's fear, rather than let the child discover that he or she has the courage and resourcefulness to discover that there are no monsters under the bed.

Anxiety disorders are the most common psychiatric illnesses affecting children and adults in North America. Yet a description of the diagnostic characteristics of social anxiety (just to choose one form of anxiety) appears to have many aspects in common simply with being an adolescent:

- Feeling highly anxious about being with other people and having a hard time talking to them

- Feeling very self-conscious in front of other people and worried about feeling humiliated, embarrassed, or rejected, or fearful of offending others

- Being very afraid that other people will judge them

- Worrying for days or weeks before an event where other people will be

- Staying away from places where there are other people

- Having a hard time making friends and keeping friends

- Blushing, sweating, or trembling around other people

- Feeling nauseous or sick to your stomach when other people are around

(Facts & Statistics: Anxiety and Depression Association of America, 2014)

While experiencing these feelings can be debilitating – to the degree that many people are seeking treatment in the form of medication and therapies – in many cases this can be mitigated by the opportunity to experience a range of social interactions, contexts and yes, even risks, during childhood and as an adolescent. Turkle (See Chapter 4) explores the importance of face time and meaningful human interactions; if these are genuinely declining, it stands to reason that young people will feel more anxiety and stress when expected to interact with others in a non-controlled, emotionally vulnerable manner. Yet taking the risk to do so has immeasurable benefits to our mental, physical and emotional well-being and perhaps even is part of what defines us as human beings.

Poor choices in future

Limited opportunities for unstructured free play and the primarily minor risks associated with childhood play inherently result in limited opportunities to develop judgment and decision making capacities. This has led to astonishing changes in North American society and the adolescent experience. Brown observes that unlike in earlier generations, the vast majority of youth will not die from infectious diseases or unsafe working conditions in mines or factories, rather the "primary threats to their health arising from their behaviour" (Arnett, 2007, p. 329).

As discussed in Chapter 3, the leading causes of death among adolescents in North America are automobile accidents and suicide, except in US where homicide is higher due to access to firearms (not because suicide is lower) (Brown, 2002). While it is positive that unsafe working conditions and infectious diseases no longer cut short as many lives, the leading causes of death that exist today could be further reduced.

One of the strongest contributing factors to developing self-regulation skills is the opportunity for unstructured play in early years. While there is a growing awareness of this need, much of our policy and education structure still is going in the direction of increased structure and early academics for young children. The consequences of this are not immediately evident, but it is entirely plausible that this change will have a ripple effect on adolescents in coming years. Tough (2012) observes that "trouble controlling impulses in elementary schools leads to relatively limited problems, but in adolescence impulsive decisions can lead to drunk driving, unprotected sex, shop lifting, or dropping out of high school" (p. 21). Given that unstructured free time for young children is a relatively simple and highly effective tool for developing critical self-regulation skills, as educators we must work towards making this a key component of early childhood education programs.

Decreased sense of control over destiny

Throughout history, human beings have sought out different ways to find a sense of purpose and relevance in life. For much of human history, close connections to the natural world and shared religious or spiritual beliefs helped bring an external sense of order and purpose. Even if an individual person could not necessarily make sense of an unexpected or tragic event, they could trust in the larger order of things which would provide reassurance and comfort through difficult times. While religion still plays a relatively large role in North America (particularly in the United States) when compared to other developed countries (Albright et al, 2002), these religious beliefs are more diverse and perhaps fragmented than in the past. For all but the most fervently religious followers, worldviews tend to be influenced by a variety of sources ranging from Hollywood gossip to reports on the economy. What we do with this

disparate abundance of information and how we order it in a way that brings us purpose and meaning in life is an individual rather than collective challenge.

With the rapid changes in society since the start of Industrial Era and perhaps even more so since the advent of the Information Age, human beings have had more options but also more stimuli and stresses. As discussed in Chapter 4, some experts such as Homer-Dixon (2000) believe that the demands of modern society may be exceeding our adaptive abilities. Others would argue that human beings are remarkably adaptive, but need the opportunities to develop a sense of themselves and their surroundings. While structured educational environments can strive to meet specific needs, much of this deep learning and connecting to the outer world happens through unstructured exploration and play. If opportunity for this disappears, individuals will have less possibilities to discover themselves and the world, and thus will have a decreased sense of control over their destiny as discussed earlier in this chapter in the section which examined intrinsic motivation and internal locus of control. The impact of perceived control over destiny is vividly illustrated by a study of British bureaucrats in civil service which showed that mortality rates were strongly correlated with status; researchers attributed these differences to high level of control and predictability in lives of those with more status, whereas lower level bureaucrats had less control which equalled more stress and stress related illness ((Homer-Dixon, 2000). Other factors may be at play too – nutrition, education, home life, and quality of healthcare, to name only a few – but it stands to reason that the power to control and determine aspects of one's life are a determinant for decreased stress and greater wellbeing.

In today's demanding and fluid world, rigid academic or social structures are no longer (if they ever were) reliable predictors of success. Students who succeed in life do not necessarily excel academically but have other skills like optimism, resilience and social agility (Tough, 2012). Yet many educational systems continue to focus on teaching students in a way that prepares them for a world that no longer exists. Rudolf Steiner speaks of teachers having the responsibility to recognize that which belongs to the future:

For you who will to work with he who guides the future of mankind, bring forth spirit potential within yourself and so achieve the power to awaken dormant faculties in others. Cultivate the seed points; foster forces of development; and recognize that which is of the future. (Rudolf Steiner, date unknown).

Many aspects of the current framework for adolescents, both in educational institutions and in broader society, fail to sufficiently recognize and foster the transferrable skills that will serve young people and the world in the future. Kohn (2014) speaks of "an epidemic of acquiescence" (p. 180) and claims that we are failing to teach young people to question, think critically and have independent thoughts. Tough (2014) argues that most affluent students are "caught in the meritocracy machine of private schools, private tutors, Ivy League colleges and safe careers" (p. 176) and are being shortchanged by not being given enough genuine opportunities to overcome adversity and thus develop character. Underprivileged youth face a host of other problems, though some strong-willed individuals manage to overcome these challenges through resilience, determination and support networks. By providing opportunities to help young people have the freedom to learn how to make their own choices and to take developmentally appropriate risks, young people have the possibility to develop a greater sense of confidence and control over their own destiny.

Chapter 7 – Creating opportunities for healthy risk

While certain aspects of the collective consciousness have gradually changed over time, human brain development has followed certain patterns for the past millennia. Given these deep-seated patterns, educators or parents are unlikely to change how teenage brains work: as discussed in Chapter 2, adolescents seek novel stimuli and sensations, and this enables them to learn, be challenged and grow as human beings. As part of this growth involves the intrinsic drive to seek out new stimuli, this period of time in life can involve both heightened real risk and perceived risk. Individuals, society and policymakers are not always effective at differentiating between genuine and perceived risks, nor the possible long-term benefits of these potential risks. One way that society can strive to lower true risk and support adolescent development is to worry less about trying to change adolescent gravitation to risk, but rather reflect on what skills we are teaching young people, in what contexts they spend time, and how they can develop good judgment through these opportunities for growth. Understanding the potential benefits of authentic risk, learning through genuine failure and the subsequent opportunities for character development can help guide our approach to working with youth.

North American society has both a great fear of potential litigation and often a poor ability to identify genuine high-consequence risks versus improbable but dramatic occurrences. When identifying possible risks in our work with young people, it would be wise to "focus on the magnitude of risk, not with risks that are statistically small" (Sunstein, 2004, p. 100). By seeking out accurate information rather than blindly following popular trends we can seek to avoid the cascade effect, which causes individuals to make decisions based on other people's decisions – but not necessarily with any rational foundation. As individuals seeking to prepare young people for the future, it also would be advisable to ponder the additional hazards of excessive risk reduction – for each child we stop from climbing a tree or jumping across a creek, how are we contributing to potential healthy or unhealthy lifestyle choices that will have an impact for decades to come? Repeated interventions –even those with the best of intentions at heart – may prevent young people from developing important aspects of their life such as close connections with nature, healthy active living habits, confidence in their own abilities or

relationships with their peers; thus, disproportionate short-sighted cautionary interventions may have unforeseen long-term consequences on the mental, emotional and physical well-being of young people.

Much of our current educational system is built up around specific expectations and frameworks to which each child and teacher is expected to adhere. However, as anyone who has worked with children can testify, human beings do not develop at a set rate nor do they naturally perceive the world in externally quantifiable ways. Specific expectations can stifle creativity as students are less likely to take a risk and more likely to do what pleases their teacher to earn good grades. A certain amount of out-of-the-box thinking can greatly benefit individuals and society; for example, if Alexander Fleming had been following a rubric or checklist for his research, perhaps he never would have thought imaginatively and discovered penicillin (Kaufman, 2010), resulting in a great loss for society. According to Tough (2012), our current educational system "rewards repressed drones" (p. 72), and the students with the highest GPAs scored lowest on measures of creativity and independence. While assessment would be more quantifiable if all students fit into convenient categories, stifling opportunities to develop creativity and independence serves neither students nor society in the long run.

Character traits such as independence and creativity, resilience and openness to taking risks can have great benefits, yet it can be difficult – both at an individual, institutional and societal level – to support their development. However, certain critical elements can help young people develop the capacity to face the world with balance and inner confidence. Tough (2012) states that "the most reliable way to produce an adult who is brave and curious and kind and prudent is to ensure his hypothalamic-pituitary-adrenal axis functions well" (p. 30). This is achieved by protecting young children from serious trauma and chronic stress, and provide a secure nurturing relationship with at least one parent. Researchers have identified specific characteristics such as grit, self-control, zest, social intelligence, gratitude, optimism, and curiosity as strengths most likely to predict life satisfaction and high achievement (Peterson, 2004). These are not traits that can be taught in a closely controlled environment; rather, they come from meeting the developmental needs of young people. For young children, a loving and

supporting environment will help develop trust and confidence in the world, whereas adolescents require a certain amount of freedom – and risk – in order to fully develop their capacities. If this is reversed and young children are pushed too early while adolescents are held back, the subsequent stress and anxiety will limit their ability to develop key life skills. As parents, teachers, friends and neighbours of young people we can seek to support this healthy development by observing how our own actions, choices and responses to young adults may support or hinder opportunities for growth in these areas. One key area which can have a direct impact on young people is by evaluating the opportunities for healthy risk in educational institutions. Outdoor education, performing arts, community service and traditional academic subjects are all areas where openness to healthy risks can support adolescent development.

Creating opportunities for healthy risk in academic contexts

As educators, we have immense opportunities to support opportunities for growth through our daily interactions with adolescents. Through our pedagogy, school policies and interactions with the broader world, we can consciously choose to incorporate our understanding of adolescent development to guide our choices and meet the needs of young people. Upon reflection, there are many tangible ways that educators can incorporate healthy opportunities for risk.

Academics is one significant area where teachers can explore how to support opportunities for healthy risk in the interest of supporting creativity, resilience and confidence. Each class – whether learning French verbs, medieval history, algebra or doing chemistry experiments – can involve a certain amount of space for creativity. In each of these cases, there also is a certain amount of form that needs to be followed – after all, French verbs have an established pattern, algebra questions need to come to a specific resolution, and chemistry experiments need to have certain safety precautions. However if we dwell solely on the mechanics of the form and do not allow time and space for discussion or exploration of potential applications, we are missing key opportunities for growth. Staley (1988) notes that "facts are safe – the person is right or wrong" (p. 101), and observes that too few facts lead to a subjective view of life while too heavy a reliance on facts deprives young people of

opportunities for of inner exploration. Much of our society today is obsessed with facts, while not necessarily supporting the skills to reliably interpret and apply this information in meaningful ways. For students to find this balance, educators must leave space for both factual knowledge and imagination, and support their personal exploration of these fields of thought.

Something as small as allowing choice in assignment topics, different presentation formats, or giving space for students to argue potentially controversial viewpoints can help create the space for students to take intellectual and emotional risks. Authentic opportunities to develop an opinion, voice this opinion and stand up for it can be powerful learning experiences. Educators cannot be part of a rigid hierarchical system and then expect creativity to happen in convenient increments when they schedule a five minute time slot. Staley (1988) observes that "to have a profound effect on the development of character means to do something over and over, to engage one's will, to build new habits and attitudes" (p. 85). For students to have confidence in expressing their own thoughts and the creativity to try innovative approaches, ideally these values are an ongoing part of the school life and culture. For teachers, as for students, it can be potentially uncomfortable to allow space for this uncertainty – after all, there is perceived and potentially real risk in giving up control and allowing space for the new. However, with time and experience and intuition, one can seek to find a balance between structure and freedom; and the more we know our students and ourselves, the better we can reach this equilibrium.

Much of North America has moved towards increasingly defined academic outcomes, standardized testing and sweeping curriculums. Yet some educators argue that this approach actually limits opportunities for learning and growth, and does not best suit the developmental needs of young people. One element that represents our obsession for measurable but not necessarily meaningful data is the use of marks and grades. While feedback and evaluation are obviously useful components of learning, the educational world's obsession with grades is not a particularly healthy habit yet one that seems immensely difficult to change. A small handful of educational institutions, such as Rudolf Steiner High School in Ann Arbor, have selected to completely stop using marks. According to their school profile:

"Students at the Rudolf Steiner High School do not receive letter grades. The requirements for passing a course consist of mastery of subject material, completion of assigned work on time, and participation in class. Students and their parents receive written evaluations at the end of each lesson block that include test scores and specific feedback. High School transcripts provide verification of credits earned and comments on the students' performance in each class." (Rudolf Steiner High School, 2015).

Contrary to some fears that these students would not be competitive in "the real world" or gain access to postsecondary institutions, the school has found that college and university acceptance levels have increased since this change, as enrollment offices now look at the individual written applications and recognize the strengths of the students rather than just seeing them as a sum of their grades. Similarly, grades have little relevance in the "real world" – employers, colleagues and friends want to know if a person is trustworthy, reliable, can follow through on a project, and problem-solve creatively when things don't go as planned. These are skills that are best developed in creative environments where there is space for risk, imagination, and unconventional ideas – plus of course the space to actually put these ideas into practice and learn from their failures and successes. As educators find the courage and insight to meet the needs of the students rather than the demands of external structures, these risks will have positive benefits for adolescents.

Physical and outdoor education

Outdoor education and physical education are a natural fit for developing a host of skills in young people. Organised sports offer a structured, recognised format for young people to challenge themselves and each other. Outdoor education experiences such as camping trips, high ropes courses, backpacking or canoeing are one of the few times in adolescence where young people can receive immediate and authentic feedback, and many people – even decades later – will remember key moments from such trips.

Both physical education and outdoor education have valuable attributes, but there are a few notable differences. Physical education, while active and dynamic, still tends to involve

specific frameworks and rules for interaction. In outdoor education, there are some specific

expectations or guidelines, but also tremendous opportunity for exploration, discovery and

growth in big and small ways. In the outdoors, there are natural consequences that clearly give

us feedback as to whether or not we are making thoughtful choices in our actions. If we don't

bother to put up a tarp well, we get wet. If we lily-dip, our boat will fall behind. If we don't pay

attention to our cooking on the fire, we might eat burnt mac n cheese for dinner! In a

classroom setting, there are not as many immediate natural consequences if we don't want to

learn algebra or how to conjugate French verbs (though there may be later consequences). So

as a teacher it can be a greater challenge to find ways to make the curriculum relevant and

interesting for each student. While some students succeed easily in classroom settings, others

may struggle; however, outdoor education can meet the needs of all types of learners and it

can promote both life skills and academic capabilities for everyone because it promotes critical

thinking, creative problem solving, awareness of self and others, and resilience in challenging

situations.

Lack of opportunity to be physically active and challenged can exacerbate conditions

such as attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD). An

astonishing 20% of all high school aged boys in North America take prescription medication and

the United States consumes 75% of world's ADHD medication (Steinberg, 2014). These statistics

speak more to the misguided expectations of our society rather than inadequacies in young

men in North America. For millennia, adolescence has been a time of heightened activity where

individuals pursue meaningful challenges and gain a sense of their role in the world; sitting in a

highly structured, intellectual environment five days a week simply does not adequately meet

the developmental needs of most young people.

While spending time in the natural spaces clearly has great benefits, it in some ways it

has become an exclusive enterprise. The North American approach to outdoor pursuits often

requires extensive transport, expensive equipment, specialized training and ongoing expenses

like lift passes or memberships. Outdoor education is widely perceived as giving an added edge

to young people; this is evident in the numerous private schools who offer extensive outdoor

education programs, as well as the many not-for-profit organisations who work with underprivileged youth. Unfortunately many public schools face greater challenges in implementing and maintaining outdoor education programs. While the value of outdoor education experiences is widely recognised, concerns about risk and cost continue to hamper valiant effort to bring these experiences to a wider audience.

Even if adventure-based outdoor experiences remain elusive in some educational contexts, in many realms of education there is increased openness to and understanding of the value of these experiences. Even just an introspective afternoon in a local park or ravine can have benefits for the participants. This peaceful and nourishing environment can be a powerful antidote to the hectic routine of daily life. Staley (1988) reflects that "creativity is born in silence. If our young people are to have the resources to deal with the world that's before them, their creativity must be protected and cultivated" (p. 94). One way we can cultivate this inner creativity and resourcefulness is through working actively to increase the accessibility of experiences in nature.

Performing arts

Performing arts and fine arts can provide a powerful form of expression for adolescents at a time in life when the human experience can seem almost overwhelming. Expression and experimentation through art and performance can allow adolescents to "try out roles, experiment with anger, confrontation, sensitivity, compassion and sacrifice, and vicariously experience what happens to people in different life situations" (Staley, 1988, p 15). Sloan (2001) states that "young people today need drama more than ever. They are growing up in a virtual wasteland for the soul, in an age where electronic simulation has all but supplanted direct and vital experience" (p. 7). Incorporating the arts into education can be an accessible but transformative process for all involved.

Performing on a stage or showcasing one's art can be an intimidating experience as it requires the individual to take on great perceived risk with no easy way to hit rewind or hide. However, the rewards can also be immense. Sloan (2001) eloquently speaks of "the vitalizing

power of imagination, the collaborative nature of the theatre, the striving to portray the truth onstage – these aspects of dramatic work can all counteract the adverse effects of an age that seems to value the digital over the human and the simulated over the actual" (p. 7). As young people are spending less time relating to human beings face-to-face (see Chapter 4), the role of theatre as a tool for developing communication and relationships becomes even more important (Sloan, 2001). According to Staley (1988), these social opportunities and friendships can be an important way for young people to engage in the "process of finding out who they are" (p. 155). While engaging in full-fledged theatre productions may not be possible for all schools or adolescents, educators can strive to incorporate some of these elements into academic subjects such as re-enactments of key historical moments or speeches, dialogues in world language classes, creative writing assignments in language arts or contact improv games in physical education.

All of these activities allow participants to take on what can feel like intimidating risks – speaking in public, expressing powerful emotions, - yet in a safe environment with the added layer of theatre. Through theatre a shy student can experience the opportunity to stand up for themselves in an over-the-top argument and an outwardly boastful student can be nudged into showing vulnerability – all experiences which expand their understanding of human emotion and interaction. At a time where empathy is decreasing and individualism is idolized (see Chapter 4), Sloan (2001) argues that "the make-believe world of drama can offer a potent antidote to the soul-sapping tendencies of our age" (p. 9) and as "the most inherently collaborative, the most social of all arts" (p. 9) is a critical tool for the social training necessary for community building. The teamwork, communication, courage and support requires for a successful drama production is in some ways a microcosm of the skills required to be an engaged member of society and thus provide rich learning environments. Sloan (2001) quotes Staley as stating that: "If, as teachers and parents, it is our highest task to help our students become themselves in the fullest and healthiest possible manner, drama can be one of our most dynamic means of assisting this unfolding" (p. 12). Whether through elaborate productions or small in-class activities, the use of performing arts is a powerful way to create engaging and meaningful opportunities for risk.

Community service, work placements and exchanges

Stepping out into the world and connecting with the community can create remarkable learning opportunities for young people. Classroom environments have their limitations and much can be gained by creating regular opportunities for engagement with the broader world, both for young people and for the community. Staley (1988) observes that "the world has so much need for the vitality and vision of our young people, and when this is clearly conveyed to them, the response is outstanding. Young people today yearn to be needed" (p. 100). Schools who recognize this need implement a variety of ways that allow young people to step into the world.

Possible opportunities for learning opportunities include community service, work placements and exchanges. As Steiner notes (quoted by Staley, 2001): "healthy emotional growth occurs when teenagers become interested in the world outside of themselves" (p. 35). Community service, whether regular involvement at a soup kitchen or a one-time commitment at a special event fundraiser, is a potent way to interest young people in the world outside of themselves, make meaningful contributions and feel needed. Beyond the aforementioned benefits, such experiences can help young people identify areas of strength and interest which they may wish to pursue in their future careers.

On a similar note, work placements or co-op placements can be a pivotal learning experience for young people. Some may discover that they love a certain type of job (or vice versa!), and often students return to the classroom with increased motivation and context for their academic studies. Some Waldorf schools follow a certain progression in their annual high school placements, for example moving from group work experiences on a farm or other practical hands-on types of work, to individual placements in socially minded organizations or in professions that are of interest to specific students.

These first experiences outside of the classroom can be intimidating – the first time my Grade 8 students volunteered at a soup kitchen, there was a moment where I remember them all huddling wide-eyed in the kitchen with no one wanting to take the risk to step into the

crowded hall first. However, within a short time the students found the courage to take on their various tasks of serving food, welcoming people, and by the end of the evening they had efficiently served and prepared a meal for several hundred people (with the support of some regular volunteers). When the doors closed and the last dishes were put away, even the students who had been anxious felt a huge sense of accomplishment and had learned immeasurably about themselves and others.

Beyond the value of having the freedom to take meaningful risks and experience the consequences in academics, physical and outdoor education, performing arts and community work placements, the importance of unstructured time must be reiterated (see Chapter 4). Without the opportunity to breathe out, process new experiences at a deep level and allow the mind, body and soul time to rejuvenate, our best efforts to create meaningful development opportunities for young people wasted will be ineffectual.

Chapter 8 – Conclusion

The research thus far has explored an overview of adolescence, with an examination of historical, cultural, gender and educational considerations of adolescence in the 21st century. The research has identified key aspects of the adolescent brain, particularly its developing prefrontal cortices and natural gravitation towards new sensations. The effects of childhood trauma, stress and potential protective factors were also discussed. Risk – both real and perceived – were studied, as well as the influence of media, youth, and policy development. The changing reality of adolescence was investigated, with in-depth looks at changing factors such as unstructured time, external pressures, technology, shifting levels of empathy and greater individualism. Benefits of healthy risk were identified, such as sense of mastery over life circumstances, executive function, self-regulation skills and resilience. Potential costs of insufficient risk were surveyed such as decreased sense of control over destiny, mental illness and impact on choices in the future. Lastly, this research examined how to create opportunities for healthy risk in educational contexts through academics, physical and outdoor education, performing arts, community service, work placements and sufficient unstructured time in order to promote healthy emotional, physical and mental development in adolescents. The following sections consist of reflections on this research and ultimately findings from this research in the context of Waldorf education.

Reflections on Research

Researching the relationship between risk, resilience and the reality of adolescence in North America in the 21st century has opened my eyes to a host of intriguing, inspiring and at times troubling observations. After working with adolescents for the past two decades, and experiencing the impacts of risk and resilience in the context of young people's development through a wide range of situations, it has been a thought-provoking journey to delve deeper into some of the neurobiological factors, underlying assumptions, cultural norms and realities that underpin these elements.

In an historical context, it was revealing to be reminded that adolescence as we know it was a relatively recent construct and in some ways came into existence more due to societal changes than care for the developmental needs of young people. While our definition of teenagehood may be a recent development, the adolescent brain has been observed to have certain consistent characteristics. I found it interesting to learn more about the neurobiological factors that explain the behaviour of the young people I work with, and how by building on these characteristics rather than seeking to change them we can maximize the opportunities of adolescence. Rather than categorizing adolescence as primarily a time of turmoil, tortured emotions and poor choices, we can learn to see it more as a time of immense opportunity for both the individual adolescent and society as a whole who would surely benefit from harnessing this energy, creativity and desire for authentic experience.

Researching our understanding of risk proved to be a veritable rabbit hole of fascinating studies, publications and revelations about how we make decisions and how this has an impact on our individual as well as collective reality. I was particularly intrigued by how much of our perception of risk is influenced by emotion, assumptions and values rather than accurate statistical information, and how intuition and quick instinctive responses can be critical at certain times and misleading at other times. The complexity of the factors that influence decision-making reminded me of the importance of critical thinking skills – and how we as educators can encourage this in young people so that they will question wisely rather than follow blindly.

In my readings about the changing reality of adolescence I was somewhat taken aback to see how much has changed since my adolescence. While young people today have access to exciting and unprecedented technology and opportunities, I am immensely grateful that I experienced life before the internet and smartphones – just so that I know that yes, we can detach ourselves from these influences and choose how we would like to involve them in our lives. While reading about the changing reality of adolescents in North America in the 21st century, I also felt a deep gratitude for the supportive family, natural environment and peaceful

rhythm that was part of my childhood, and for the freedom, trust and responsibility that was part of my adolescence.

Exploring the benefits of risk and the costs of inadequate risk made me ponder many elements of contemporary North American society. While we claim to live in a time of freedom and opportunity, and in many ways this is true, in some ways our fears and expectations can hold us back from developing to our maximum capacity as individuals and as a collective society. Throughout this section it also became clearer to me how many of the challenges that face us today – sense of isolation, rising rates of mental illness such as depression and anxiety, environmental degradation, feeling of powerlessness in the face of a complex, daunting world – are closely interconnected. Similarly, the remedies to these challenges are not singular. A loving supportive environment needs to be balanced by the freedom to experience risk and develop the capacity to make good decisions; opportunity to participate in meaningful activity needs to be balanced by time and space for unstructured introspective reflection. Opportunity for risk is hardly the answer to today's ills, rather it is one interconnected element that is part of learning and growth, and this opportunity for healthy risk are underrepresented in the lives of many young people in North America today.

The recommendations and ideas for incorporating healthy risk into educational contexts are only the tip of the iceberg – any one of these areas has enough potential content for a master's project of its own. Openness to risk and uncertainty is not only a necessary element of education; in many parts of our lives, openness to the unknown can create rich opportunities for learning and growth. Ultimately as we move away from trying to control or predict the outcome of our actions, while having the confidence in ourselves and the universe that matters will turn out alright, this detachment can reduce anxiety and suffering while still leaving opportunity for learning, self-development and an engaged life. In part this increasing openness to risk and uncertainty can be supported in educational contexts through the areas discussed: academics, physical and outdoor education, performing arts, community service, work placements and sufficient unstructured time. However, a large part of creating a positive

change in promoting healthy emotional, physical and mental development in adolescents requires a shift in societal values rather than isolated actions.

Risk in the Context of Waldorf Education

Many elements of this research align with the underlying values of Waldorf education. However, at times contemporary values or societal pressures may cause individuals or institutions to lose sight of their pedagogical goals or philosophy.

Waldorf schools have long sought to incorporate elements from different cultures, historical epochs and geographical areas into their curriculum. One could argue that the curriculum remains somewhat Eurocentric and at times could benefit from more diversity (a brief examination of proposed biographical figures in Waldorf tomes such as Wilkinson's Teaching History (2000) shows a great dearth of female role models. However, overall this is not atypical of educational curriculums and if anything, the Waldorf movement is in a position to make active changes in these areas by striving to find a nourishing balance between archetypes and inclusivity in the modern era.

One of the foundational tenets of Waldorf education is the concept of developmentally-appropriate education which meets the needs of each child as the change and grow. Thus the ideas presented by neuroscientists regarding adolescent brain development in many ways supports and mirrors the observations of Steiner. While Waldorf education does not necessarily use the same terminology, many of the underlying observations are complementary or comparable to modern research on adolescent brains. One difference perhaps is that anthroposophy embraces the interconnected elements of the human being while some branches of research focus primarily on the physical aspects.

While Steiner did not write extensively on risk using those terms, he spoke at length about the need for clarity of thought. Similarly to our at times skewed interpretations of real and perceived risk, Steiner speaks of the importance of making acute observations and acting on our true understanding of the world rather than out of habit or without thought. It appears

that Steiner also recognized the value of risk and challenge in developing character, as is evident in the following anecdote from the first Waldorf school in Stuttgart:

"One day, Bothmer was teaching and a boy was disruptive in the class. This was a middle-school-aged boy, and it was not the first time this had happened. Bothmer got a long beam and attached each end to the balcony, across the expanse of the gymnasium. Please note that the beam was quite high in the air. Bothmer had the boy walk across the beam. Just at that moment, Rudolf Steiner walked in, as he was prone to do in the early days of the school. At this point, Bothmer had second thoughts and wondered if this was too severe; but the boy made it safely across. Steiner told Bothmer afterwards, that this experience saved the boy from becoming a criminal!" (Swain, p. 1.).

While we may not always know the long term consequences of providing developmentally appropriate opportunities for challenge and risk to young people, both intuition and research demonstrate that key life skills are fostered through such experiences.

Many aspects of Waldorf education naturally lend themselves to the development of emotional, physical and mental capacities in young people. More so than many educational systems, at its best, Waldorf includes a diverse range of experiences available for students. Movement, music, intellectual and creative work are all part of the in breath and out breath of a balanced day and year. The areas discussed in Chapter 7 – academics, physical and outdoor education, performing arts, community service, work placements and sufficient unstructured time – are already part of many Waldorf school. The richness and relevance of this curriculum puts Waldorf schools into the position that they can be leaders in the field of developmentally-appropriate curriculum and education.

While Waldorf schools already have many of the elements that can contribute to opportunities for healthy risk and growth in adolescents, they too are influenced by the values and concerns of modern society. As Waldorf schools seek to meet the needs of the students while also addressing societal pressures, educators must walk a fine line between trusting their judgment and intuition yet also addressing external concerns and pressures. Rather than

seeking isolation from these external forces, Waldorf educators can strive to further develop bridges with broader educational world. Relatively straightforward elements such as accessible terminology, shared professional development opportunities, educational workshops for the public and an openness to connecting with contemporary issues or concerns are key ways that the Waldorf movement can further grow and connect with the broader public. Waldorf education has many of the key elements that can address contemporary issues in adolescents; however, the educational movement is still learning how to present itself in a way that is accessible – financially, philosophically and logistically – to a greater number of participants.

List of Relevant Organizations

Association for Experiential Education

http://www.aee.org/

National Outdoor Leadership School

http://www.nols.edu/

Children & Nature Network

http://www.childrenandnature.org/

Outward Bound International

http://www.outwardbound.net/

Association of Waldorf Schools of North America

https://waldorfeducation.org/

Annual Wilderness Risk Management Conference

http://www.nols.ca/wrmc/

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