

**PROVIDING ADOLESCENTS WITH THE SOCIAL-EMOTIONAL  
DEVELOPMENT AND SKILLS TO CULTIVATE RESILIENCE**

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## Dedication

*To Efebomwan and Nosakhare*, thank you for overcoming more than I know to guarantee my own SEDS were so firmly planted, thank you for striving to be my cultivators amongst chaos,

*To O4 – commonly known as Osaretin, Efenosa, and Osato* – thank you for being my core, my cultivators, and so much more,

*To Diana and McKenzie*, thank you for the growth-fostering connections and the never-ending words of affirmations, which served as nourishment for my own SEDS

&

*To Johnny*, thank you for providing me with a partnership that nourishes and sustains my own SEDS for resilience each and every day. I am so thankful to have a lifetime of oxytocin opportunities alongside you!

## **Abstract**

The purpose of my Master of Counselling project was to address the widespread impact of complex trauma on the healthy development of youth within the period of adolescence. The project synthesizes current research from numerous theories within the field of interpersonal neurobiology to offer a conceptual framework of PRESENCE, intended to support traumatized adolescents in growing resilience. The project begins with an overview of adolescent development, highlighting the long-lasting and extensive impacts that occur following exposure to complex trauma. A detailed discussion on the development of the social-emotional brain, and the associated social-emotional development and skills (SEDS) for resilience is presented. Utilizing empirical data gained through a semi-structured interview, the PRESENCE framework and its ability to plant, nourish, and sustain the SEDS of resilience is analyzed. It is anticipated that this project will encourage and equip parents, teachers, and mental health practitioners to understand and support traumatized adolescents.

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## **Chapter One: Introduction and Overview**

Based on the hypothesis that oxytocin that is produced within affectionate human relationships and interactions is under-estimated, this project provides individuals with guidance to establish the safe, growth-fostering environment required for adolescents who have experienced complex trauma (Hill, 2015; Panksepp & Biven, 2012). Through illumination of affectionate, playful, and empathetic connections, this project aims to harness the power of an affectionate human relationship to support adolescents in developing an enduring sense of resiliency. In this chapter I begin with a brief introduction to the prevalence of complex trauma and articulate the inverse relationship between complex trauma and adolescent well-being. Thereafter, I present an explanation of the research question which informs the current project. The chapter also includes an overview, followed by a justification for completing a project of this nature. In the remaining paragraphs, I clarify frequently used terminology, and provide an outline of the project's organization.

### **Background**

Adolescence is a period during which individuals undergo a wealth of changes in their emotional, social, physical, and psychological development. Recent advances in the field of developmental science have illuminated that the adolescent brain is a work in progress, and adolescence as a critical period to build on early investments, offering a second chance for those children who have experienced complex trauma during the period of childhood. Complex trauma describes the experience of multiple, chronic, and prolonged, developmentally adverse traumatic events, most often of an interpersonal nature (e.g, sexual, emotional, or physical abuse; war and natural disasters; community

violence; Cook et al., 2005). De Bellis and Zisk (2014) in their definition of developmental trauma included

exposure to actual or threatened death, serious injury, or sexual violence... experiences of direct trauma exposure, witnessing trauma or learning about trauma that happened to a close friend or relative... motor vehicle accidents, bullying, terrorism, exposure to war, and exposure to domestic and community violence. (p.1)

Siegel (2015) conceptualized developmental trauma as “an experience early in life that [has] altered the course of foundational development” (p.162).

Adolescents who experience traumatic events in the early stages of development are at risk for adverse effects on the development of their brain, other body systems, and the ability to connect and attach with other people (Cozolino, 2014; Schore, 2016). When instances of complex trauma are characterized by a caregiver’s failure to affectionately exhibit the required congruency, contingency, and care necessary for brain development, adverse impacts arise. Precisely, the experience of complex trauma has been shown to result in deeply painful emotional states and impinge the sculpting and mediation of the structure and function of adolescents’ brains (Hill, 2015). Often, complex trauma produces ‘scattered minds’ that fail to develop emotional self-regulation and attention control (Maté, 2000).

Adolescents who experience complex trauma learn to view the world as unsafe, as their brains concurrently create implicit, unconscious memories within which increased levels of cortisol production are categorized as the body’s normal baseline (Schore, 2016). Ultimately, these adolescents are predisposed to the development of learned helplessness, which will motivate adolescents to form an attributional style that

emphasizes past failures (Ormrod, 2016). Learned helplessness often manifests itself as chronic depression and may contribute to the development of anxiety (Panksepp & Biven, 2012). Adolescents who display learned helplessness have little confidence in their ability to be successful in the future, and as a result possess low levels of motivation and achievement. The co-morbid issues of learned helplessness, depression, and anxiety often compromises adolescents' ability to learn. When plagued by negative, anxiety-related affect, adolescents' working memory becomes overloaded, interfering with attention and information processing (Pessoa, 2008).

Negative stressors and traumatic events have been found to have negative long-term effects on health through increasing adolescent predisposition to a physiological or psychological disorder (Sarafino, Smith, King & DeLongis, 2015). Therefore, when multiple stressful events occur in an adolescents' early life, his/her/zir odds of developing psychological (e.g., depression) and physiological (e.g., diabetes) disorders in adulthood becomes elevated (Anisman, 2016). According to Perry (2003), complex trauma in adolescents inhibits verbal communication, and obstructs neurological pruning, which may impact adolescents' ability to regulate the autonomic nervous system and experience normative development (Green & Myrick, 2014). In addition, adolescents who have experienced complex trauma are at significant risk for a variety of other behavioral, neuropsychological, cognitive, emotional, interpersonal, and psychobiological disorders (Becker-Weidman & Hughes, 2008).

Congruently, it is imperative that we strive to create and provide growth-fostering relationships within which adolescents are emboldened with the ability to develop the holistic self-regulation required for resilience. Within such affectionate relationships, adolescents' development of emotional literacy, or the aptitude to understand the

emotions of one and others, as well as effectively regulate and express one's own emotions can be actively supported (Goleman, 2006).

### **Research Question**

This project was composed with the intent of addressing the following question: In what ways can affectionate human relationships be used as a pathway to establish the growth-fostering environment to support the resilience of adolescents who have experienced complex trauma? For the purpose of this project, resilience is characterized in relation to an adolescents' ability to achieve optimal social - emotional development and skills (SEDS), despite having faced adversities. Principles of developmental neuroscience, affective neuroscience, dyadic developmental psychotherapy (DDP), and modern attachment theory are used in this project as a theoretical guideline for analyzing the research question.

### **Rationale and Significance of Topic**

The brain is a social organ whose growth and survival is promoted or precluded based on the relationships and connections an adolescent is able to form (Cozolino, 2014). Further, positive relational interactions have been found to help in the regulation of the brain's stress response systems and allow the presence of positive hormones within adolescents to promote healing and healthy development for both the normal and maltreated adolescent (Ludy-Dobson & Perry, 2010). Harmoniously, this project aims to address the quintessential dimensions of humanity by: (a) highlighting human capacity to heal one another and the central role of relationships in restoring adolescent well-being, (b) providing individuals with meaningful strategies to facilitate communication and support adolescents in finding a sense of meaning, (c) illuminating the importance of warm, affectionate, and reciprocal social conditions to create growth-fostering

environments and build resiliency in adolescents who have been impacted by complex trauma (van der Kolk, 2014). To achieve this end, this project integrates current literature to demonstrate how my conceptual framework of PRESENCE is a means through which one can support adolescents whose SEDS for resilience have been withered by complex trauma.

With the recent identification of the effects of toxic stress in childhood and adolescence, interventions to address weakened brain architecture and to build cognitive, social, and emotional capacities for adolescents are gaining emphasis (van der Kolk, 2014). *Being with, not doing* is the best way to allow the corrective emotional experience required to truly foster resilience in adolescents (Cozolino, 2014). Despite this, Connections Intensive Treatment Homes, based in Edmonton, Alberta is currently the only dyadic developmental psychotherapy-based, trauma focused, program offered with association to Alberta Children's Services. Furthermore, most programs offered in relation with Alberta Children's Services focus on early intervention and are designed for youth in their early childhood stages. The prominent focus on early childhood intervention in Alberta is excellent for preventing complex trauma yet overlooks a salient population where the effects of complex trauma truly begin to show and proliferate. In essence, a second window of opportunity is missed. While a number of pieces regarding how we can work to mitigate the impact of complex trauma have been put together, I hope to integrate what is known in research with current advances in developmental and affective neuroscience to create my own conceptual framework which aims to bolster the SEDS of adolescents who have been impacted by complex trauma.

My work may be beneficial in helping to dispel the notion that one must gain expert level knowledge and skills regarding *what one should do* to support an adolescent,

and rather emphasize the salient impact that arises when we instead shift focus to *how one should be*. I want to educate individuals about the concept of sociostasis, or the social regulation of the brain (Cozolino, 2014). It is my hope that offering comprehensible education and insight will aid in underscoring how we can each play an important role in assisting adolescents to develop SEDS in such simple ways. This project aims to offer an easily accessible culturally-sensitive tool that any individual can use when working to combat the negative impacts of complex trauma and support adolescents in planting, nourishing, and sustaining the SEDS of resilience.

### **Operational Definitions**

**Adolescence** refers to a period that is vital for the transition from childhood to adulthood. This project conceptualizes adolescence to encompass the ages of nine to age 25, when the maturation of the pre-frontal cortex plateaus (Schoore, 2016).

**Affect** refers to “feelings, emotions, and general moods” (Ormrod, 2016, p. 445). Affect can be further distinguished between *trait-like affect*, a stable pattern of moods and emotional response to stimuli, or *state-like affect*, temporary feelings or emotions that rise from fluctuating environmental stimuli (Linnenbrink, 2006). Emotions are understood as fleeting “short, intense episodes,” whereas moods are enduring and distributed over no particular antecedent (Linnenbrink, 2006, p. 309). For the purposes of this project, the terms affect and emotion are used interchangeably.

**Oxytocin opportunities** are moments that are filled with reciprocal and warm interactions between adolescents and others. Through oxytocin opportunities, adolescents are given the chance to experience warm interactions with others and begin to develop a positive blueprint of what relationships are truly about.

**Resilience** refers to the capacity to overcome difficulties and find balance after the hardships which inevitably happen in life (Sroufe, 2005). Throughout this project, resilience is characterized in relation to adolescents' ability to overcome difficulties and develop SEDS in the face of adversity.

**Social-emotional development and skills (SEDS)** refers to the following skills: emotional coordination, the capacity to meet internally to navigate development (MIND) oneself, and the ability to play and connect with others.

### **Overview of the Project**

This project includes a comprehensive review and amalgamation of the literature and empirical data which form the basis of my conceptual framework of PRESENCE as a means to establish a growth-fostering environment and effectively support adolescents who have experienced complex trauma. This chapter introduced the research question and clarified terms used throughout the project. Chapter two describes the research process and methodology undertaken during the creation of this project and provides a preliminary introduction to the PRESENCE framework. Chapter three comprehensively examines the literature regarding the intersection between adolescent development and complex trauma, as well as provides an exploration into the concept of SEDS and the PRESENCE framework. Chapter four offers a discussion regarding the project's strengths, limitations, and wide range of implications. In addition, Appendix A contains the participant invitation letter and consent form utilized throughout the process of gaining empirical data for the PRESENCE framework. Appendix B contains the semi-structured interview questions used throughout the research process. Lastly, Appendix C contains a curated handout which offers a guideline for the phasic implementation of the



PRESENCE framework to facilitate the planting, nourishing, and sustaining of adolescent SEDS.

This chapter described the period of adolescence, and identified the negative impacts of complex trauma on adolescents' development and well-being. The chapter also presented the author's personal and clinical perspectives on the growing need to address the occurrence of complex trauma within adolescent populations. The next chapter outlines the research methodology used in the formation of the PRESENCE framework and the project as a whole.

## **Chapter Two: Methodology**

These benefits of positive social connections are emphasized throughout the period of adolescence, wherein optimal social-emotional developmental allows the endowment of the seeds to grow an enduring, lifelong sense of resilience. In this project, the complexity of the interpersonal neurobiological processes that define the stage of adolescence and concurrently dictate adolescents' well-being have been depicted. These processes must be understood in the context of psychosocial development. In this chapter, the information used to develop this project and the formation of the associated relationship-based conceptual PRESENCE framework are described. The chapter includes the search terms and databases utilized. The chapter also details the various conferences attended, the course work taken, the research methodology employed, and the process of data collection and analysis. The chapter concludes with an amalgamation of the research process via an introduction to the PRESENCE Framework, as well as the ethical considerations addressed.

### **Literature Review**

The research process for this project was multifaceted and evolved over the course of two years. The literature for this project was obtained through a secondary analysis of available published works regarding adolescent development, complex trauma, and adolescent resilience. Google, and Google Scholar were used initially to obtain generalized knowledge followed by further research about adolescent development and complex trauma using the following University of Lethbridge databases: Child Development and Adolescent Studies, Alberta Research Portal, PsycINFO, Academic Search Complete, Ovid, Wiley Online Library, PubMed Central, National Research

Council Canada: PubMed Central Canada web-based repository, SAGE Journals, ProQuest, Oxford Journals, Web of Science Core, EBSCOhost, and Science Direct.

The search terms used included but were not limited to: the science of emotion, contemporary theory of neuroscience, affective neuroscience, dyadic developmental psychotherapy, adolescent emotion regulation, adolescent mentalization, attachment parenting, attachment based developmental approach, internal working model, attachment and resilience, the neurobiology of attachment, the neurobiology of trauma, social neuroscience, socioemotional development, socioemotional skills, polyvagal theory, interpersonal neurobiology, relational trauma, complex trauma, developmental trauma, and adverse childhood experiences. The publication dates of articles were limited to works published within the last 26 years (i.e., 1992 and beyond), as the notion of complex trauma and the field of child and adolescent development are relatively novel. However, articles published in Canada or North America within the last 15 years were given priority, as these works were deemed to have information most relevant to the current project. The following sections further outline the foundational instances of experiential learning that formed the rest of my research process.

### **Endeavours of Experiential Learning**

Throughout the initial stages of my literature review, I struggled to comprehend the *how* behind adolescent resilience. Being a visual and tactile learner, I lacked the experience-dependent knowledge that could help me tie together the wealth of information I had obtained throughout the literature review. Despite the valuable information included within courses like *Counselling Diverse Clients* (CAAP 6607), *Biosocial Foundations of Health Psychology* (CAAP 6635), and *Cognitive and Affective Bases of Learning* (CAAP 6631), I continued to struggle when trying to verbalize the

intricate relationship I had discovered to exist between complex trauma and lifelong health and wellbeing. I noted my definition would change between each conversation, or that I would often find myself lost in the magnitude of information I had collected. I worried that my passion, worldviews, and lived experiences would create a bias, and skew the way in which I chose to perceive the literature I read. I hoped to find people who, too, were currently engaged within the field of complex trauma and could affirm my months of hard work. More importantly, I wanted the opportunity to connect with someone who could let me know if I had gotten it all wrong, what parts I was missing, and spark my creativity in terms of areas I had yet to explore. A quick search informed me that online workshops and courses, as well as conferences would be my best – as well as most accessible – means to achieve my goal of engaging in formative instances of experience-dependent learning.

**Making Sense of Resilience.** In the process of searching for literature that could best help me grasp how to make the most effective change within an adolescent's life, I learned about Gordon Neufeld from the Neufeld Institute. The Neufeld Institute is an online institute that focuses on the use of developmental science to aid child rearing via offering self-study classes, in-person intensive retreats, and scheduled online courses instructed by a wide range of practitioners. I chose to enroll in a scheduled online course, titled *Making Sense of Resilience*. This live online course took place over the course of five weeks during October 2017 with Gordon Neufeld as the instructor. Through taking this course, I was able to gain the intimate understanding of resilience I desired and increased my ability to conceptualize unique, play-based methods through which one could encourage and safeguard the resilience of adolescents who have experienced

trauma. Following this course, I returned to the literature review with an emphasized focus on the value of relationships in healing complex trauma within adolescents.

**2017 Dyadic Developmental Psychotherapy Conference.** The Neufeld Institute course sparked an intense interest in the field of affective neuroscience and the notion of social-emotional development regulating life health. Equipped with my preliminary understanding of attachment-based approaches to development, I returned to Google to seek possible attachment-focused conferences and/or workshops I could attend. Subsequently, I attended the Dyadic Developmental Psychotherapy (DDP) Conference in the fall of 2017. Attendance of this conference marked a pivotal point in the research process for this project. I was able to partake in the intensive sessions and was presented with the opportunity to inquire about attachment-based pathways to resilience from DDP experts, Daniel Hughes and Jonathan Baylin. I realized the value of creating a conceptual framework to help amalgamate the wealth of information I was obtaining. Further, attending this conference introduced me to the study of the neurobiology of complex trauma, and the sole Dyadic Developmental Psychotherapist in Alberta, Tracy Cook. Having gained the how behind adolescent resilience from the Making Sense of Resilience Course, I was now prepared to begin exploration of the detailed characteristics encompassed within the concept of adolescent resilience.

**Viewing of the National Institute for the Clinical Application of Behavioral Medicine (NICABM): Treating Trauma Master Series.** Following the online course and conference, I read the following works: *The Body Keeps the Score* by Bessel van der Kolk (2014), *The Neuroscience of Human Relationships* by Louis Cozolino (2014), *Born for Love* by Maia Szalavitz and Bruce Perry (2010) and *The Developing Mind* by Daniel Siegel (2012). I aimed to immerse myself in the field of psychoneuroimmunology as a

whole, which demanded a deeper understanding of polyvagal theory and fields of interpersonal neurobiology and affective neuroscience. Finding myself saturated from reading numerous articles and books, I once again turned to Google to explore alternative venues and learning opportunities to increase my comprehension of the link between psychoneuroimmunology, adolescent health, and adolescent resilience. I came across the National Institute for the Clinical Application of Behavioral Medicine and decided to purchase their *Frontiers in the Treatment of Trauma: Master Series*, which was offered online. This package included the following courses:

- *Why the Vagal System Holds the Key to the Treatment of Trauma* by Dr. Stephen Porges
- *Finding Meaningful Change After Trauma: The Unique Strengths of the Affect-Based Approach* by Dr. Diana Fosha
- *An Unexpected Culprit: How the Body's Incomplete Response to Trauma Can Aggravate Symptoms* by Dr. Robert Scaer
- *Tiring Trauma Out: How to Activate the Body's Natural Defense Mechanisms Against Trauma* by Dr. David Berceci
- *The Neurobiology of Trauma - What Is Happening in the Brain of Someone with Unresolved Trauma* by Dr. Ruth Lanius
- *The Power of EMDR to Treat Trauma: Identifying, Reprocessing, and Integrating Traumatic Memories* by Dr. Francine Shapiro
- *The Body's Critical Role in the Treatment of Trauma* by Dr. Pat Ogden
- *How to Work with the Part of Trauma That Can't Be Verbalized* by Dr. Peter Levine

- *How to Target Treatment to Help Patients Reclaim Their Lives After Trauma* by Dr. Bessel van der Kolk

These courses were offered in an asynchronous learning style, which allowed me to complete them in the first half of 2018. My intent in taking these courses was to ensure I could garner a comprehensive overview of the neurobiological association between complex trauma and adolescent resilience from nuanced and distinct angles. Completion of these courses was the final step in helping me to integrate all the concepts together to construct my proposed conceptual framework. Acknowledging the large task of creating a conceptual framework, I opted to achieve this end through multiple smaller tasks. The creation of an independent study course allowed me to continue literature exploration and presented me with the opportunity to engage previous connections made at the DDP conference to gain empirical data to support my PRESENCE framework.

### **Empirical Research Process**

During 2018, I constructed and completed the independent study course *EDUC 5590: A qualitative exploration into the application of interpersonal neurobiology* through the University of Lethbridge. To achieve the objectives required within the course, I was required to demonstrate critical and analytical skills through examining the range of central theories that underlie the field of interpersonal neurobiology and subsequently integrate relevant theories to form a conceptual framework. I achieved this objective through using a variety of qualitative methods, such as participant observation and a semi-structured interview, which provided me with empirical data to validate my conceptual framework of PRESENCE. To gain the aforementioned data, I sought to compose and execute a semi-structured interview with practitioners who employed interpersonal neurobiology principles when working alongside adolescents with complex

backgrounds. Recalling that Tracy Cook was the sole licensed dyadic developmental psychologist in Western Canada, I reached out to her with hopes of attaining a comprehensive picture of her work with traumatized adolescents within Connections Treatment Homes (CTH).

After having the opportunity to observe and attend the CTH Christmas celebration, I decided to employ a case study approach since this method facilitated me in answering the how and why underlying my research question, while simultaneously considering the context. Unlike mere observation, the qualitative case-study approach enabled me to seek greater understanding of the impact of complex trauma and its embeddedness within adolescence (Stake, 1995). Furthermore, it allowed me to triangulate data from a variety of sources such as personal observation, information conversations with staff at CTH, and the semi-structured interview with Tracy. I received ethical approval for my research study through the University of Lethbridge Human Subject Research Committee (protocol #2018-034; see Appendix A for the letter of invitation and consent form). I then consulted with Tracy to set up an interview time and date. The purpose of my semi-structured interview with Tracy was to answer the questions: (a) how does the DDP therapist use interpersonal neurobiology concepts in building and maintaining health-fostering relationships with child and youth clients? (b) what kind of psychological changes does the DDP therapist hope to achieve by using these constructs? and (c) how do these psychological changes occur in the DDP conceptual framework?

In the process of transcribing the interview, I identified several emergent themes relating to my PRESENCE framework. Amongst these themes was the notion that adolescents must experience a shift in previously learnt negative perceptions themselves



and their self-worth in order to allow the development of trust. It is from this development of trust within growth-fostering relationships that provides individuals with the ability to help ignite the planting, nourishing, and sustaining of SEDS and promote adolescent resilience. Tracy's interview highlighted the requirement to actively provide intersubjective moments where adolescents can experience the oxytocin opportunities required to instigate brain growth. Moreover, the interview emphasized how individuals must scaffold, not just support, the formation of adolescent SEDS. Holistically, this interview aided in my recognition of the idea that internalized motivation is the prerequisite for the planting, nourishment, and sustaining of SEDS. I used these insights to inform the objectives of the PRESENCE framework. Ultimately, completion of the independent study enabled me to gain tangible empirical data regarding the relevance of affectionate human attachments when working with adolescents who have experienced complex trauma.

### **Synthesis: The Conceptual Framework of PRESENCE**

My conceptual framework to promote adolescent SEDS began with noting the interplay of a wide range of theories within the field of interpersonal neurobiology. Recognition of this interplay led to an exploration and identification of common themes within the literature, which emphasized the salient value of human connection in facilitating adolescent growth. I began to ponder how the common phrase "*your presence is a present*" nicely encompassed this phenomenon. Enticed by the opportunity to bring life to this statement, I endeavoured to create my conceptual framework of PRESENCE. Major themes in this conceptual framework included the necessity for individuals to be:

- Positively playful
- Receptive and reciprocal
- Empathically attuned

- Self-aware for scaffolding
- Encouraging and exhibiting empathy
- Non-judgemental and nurturing
- Curious yet compassionate
- Endorsers of independence and imagination

While the need to create a conceptual framework was highlighted throughout the in-depth literature review and research process, the establishment of the proposed conceptual framework employed personal knowledge gained from the Master of Counselling Program, the experiential learning experiences undergone throughout the research process, and an eight-month practicum placement at Southern Alberta Forensic Psychiatry Services.

### **Ethical Consideration and APA Adherence Statement**

All sections of this project adhere to the American Psychological Association's (2010) standards for grammar and sentence construction. In addition, the *Canadian Code of Ethics for Psychologists* (Canadian Psychological Association [CPA], 2017) remained at the forefront of my mind during the composition of this project. The current project does not involve human participants, thus a novel submission for ethics approval was not sought. However, data from my pre-approved human research ethics approval forms the empirical basis of the PRESENCE framework in chapter three. At all times, I adhered to the dissemination of information guidelines outlined by the University of Lethbridge Human Subject Research Committee's (HSRC). The HSRC requires adherence to the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS; Canadian Institutes of Health Research et al., 2014).

**Overview of the Project**

This project was developed to equip parents, practitioners, and teachers with all levels of training with the knowledge and sense of agency required to foster resilience within adolescents who have been impacted by complex trauma. This chapter detailed the thorough research process, which involved both a literature review and instances of experiential learning. The chapter concluded with an introduction and overview to the PRESENCE framework. The next chapter contains a literature review and an amalgamation of literature and data to support the PRESENCE framework.

### **Chapter Three: PRESENCE Yields Optimal Adolescent Development**

The purpose of this chapter is to present an overview of the literature which formed the basis of the project and answered the research question: In what ways can affectionate human relationships be used as a pathway to establish the growth-fostering environment to support the resilience of adolescents who have experienced complex trauma? To address this question, the effects of complex trauma on adolescent development are articulated within this chapter. Next, the impact of affectionate relationships is highlighted through a quick overview of the pathways through which the adolescent brain matures. Thereafter, the PRESENCE framework is outlined and dissected to illustrate how the model can be used to buffer the impacts of complex trauma and build SEDS in traumatized adolescents.

#### **Adolescent Development**

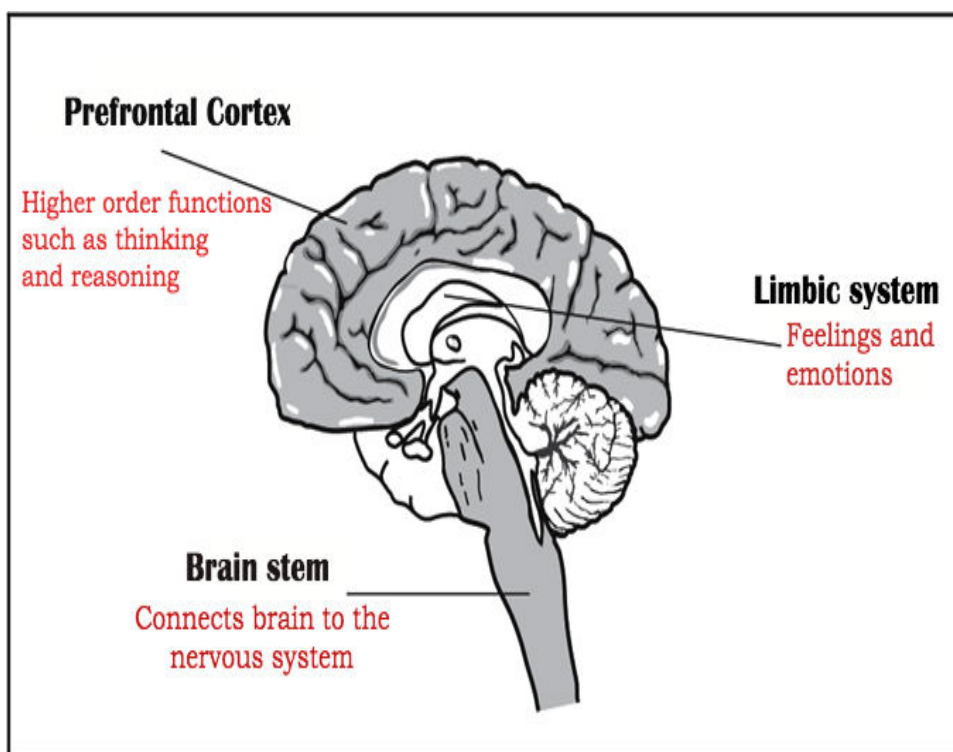
Adolescence is a multifaceted period of development that is influenced by the interplay of social, psychological, physiological, biological, environmental, cultural, spiritual, and systemic factors. During the period of adolescence, the brain undergoes extended structural and functional development in multiple regions, primarily those involved in emotion regulation, empathy, executive functions, abstract thought, social engagement, morality, spirituality, and empathy. Notoriously, this period has been associated with significant emotional, biological, social, and physical changes which result from puberty, complex and fluctuating social relationships, a growing need for independence, academic and employment pressures, and fluctuating social relationships (Casey, Duhoux, & Cohen, 2010). Adolescence also entails the active development of the brain circuits responsible for the regulation of stress. The ongoing brain development occludes adolescents' ability to exhibit matured responses to stress and causes

adolescents to experience amplified emotional reactivity to stressors. As a result, adolescents are highly vulnerable to the development of mental illnesses, including depression, anxiety, antisocial behaviour, and other stress related disorders (Powers & Casey, 2015). Consequently, the period of adolescence has been characterized as both a risk and an opportunity (Anda et al., 1999).

### **How the Brain Grows: Using Love For Social-Emotional Development**

At the root of adolescent development is the hierarchical development of the brain, beginning with the establishment and healthy structural and functional development of the social-emotional brain, which is composed of intricate connections formed between crucial areas of the brain (Figure 1). Emotionally enriched environments are the key to ensuring the optimal development of the adolescent social-emotional brain, which proceeds the development of resilience (Siegel, 2012). The activation and subsequent growth of the social-emotional brain is highly contingent on the specific emotional contact and the experience of positive hormones and neurotransmitters (e.g., dopamine, endorphins, oxytocin, and opiates) found within human relationships (Panksepp & Biven, 2012). During the period of early childhood, warm and loving human relationships are crucial for offering *oxytocin opportunities*, which are moments that are filled with reciprocal and warm interactions between adolescents and others. Through oxytocin opportunities, adolescents are given the chance to experience warm interactions with others and begin to develop a positive blueprint of what relationships are truly about. These instances of experience-dependent learning equip adolescents with the motivation and self-worth required to form resilient social-emotional brains (Ormrod, 2016).

The formation of the brain stem (i.e., reptilian brain) at birth permits basic bodily functions like breathing and motor coordination, ensures adolescent survival, and forms the foundation of the social-emotional brain. The next part of the social-emotional brain to develop is the chief regulator of adolescents' ability to develop SEDS, and is commonly referred to as the limbic system. The limbic system will be interchangeably referred to as the emotional brain. Although the last to develop, the prefrontal cortex (herein referred to as the thinking brain) is the glue of the social-emotional brain (See Figure 1). The thinking brain provides adolescents' reptilian brain with key pieces of information or memories needed to help youth move from primitive reactions (e.g., fight/flight/freeze) and instead allows deep processing of information (Schoore, 2016).



*Figure 1.* An illustration of the key centers of the social-emotional brain based on Maclean's (1949, as cited in Ploog, 2003) triune brain theory

Further, this deliberate act of information processing requires adolescents' engagement in the joint process of self-regulation, which permits impulse control.

Adolescents are simultaneously endowed with the ability to think about long-term costs and benefits and instead choose adaptive responses despite the context. The growth of the social-emotional brain influences emotion generation and regulation, while simultaneously, improving adolescents' impulse control and ability to inhibit behavioural responses (Yurgelun-Todd, 2007). Optimal development of the thinking brain begets the formation of complex cognitive capacities, including reasoning, planning, and behavioural control (Casey, Galvan, & Hare, 2005). These cognitive capacities are often referred to as executive function skills.

The final center of the social-emotional brain, the Default Mode Network (DMN), can be thought of as the *chill* place of the social-emotional brain. The growth of the DMN facilitates increases in memory, self-awareness, and goal setting for adolescents (Moffitt & Brown, 2015). It is here that the thinking and reptilian brain come to intertwine to enable the development of higher order cognitive processes which underlie adolescent self-reflection, self-awareness, and self-referential processing (Lanius, Vermetten, & Pain, 2010). The reflection about their own actions and behaviours precipitates adolescents' learning to chill out and to MIND oneself, that is, to independently *meet internally to navigate development*.

**Puberty plays a role.** Concurrently, adolescents undergo salient physiological and biological changes throughout their bodies, an occurrence commonly identified as puberty. As the social-emotional brain continues to mature during adolescence, puberty incites the rapid formation of neurological connections and strengthens valuable pre-existing connections through the process of myelination. Myelination transpires via the experiences and actions of adolescents and results in heightened communication between brain pathways deemed valuable, as these pathways are insulated and enhanced – much

like the upgrading of a dirt road to a paved pathway (Cauffman & Steinberg, 2000). The coinciding process of synaptic pruning that occurs in tandem with myelination underlies the formative remodelling of the adolescent brain. Similar to wilted old tree branches, inactive brain pathways are diminished in order to allow increased communication between circuits that are highly used and actively growing. How adolescents spend their time determines which brain pathways are formed, myelinated, and intensified and which are ultimately discarded via pruning.

Puberty begets an increase in the hormone dopamine, which is known for its role in regulating and cultivating the brain's reward circuitry. In fact, the levels of dopamine individuals can experience in their lifetime reach an unparalleled peak in adolescence (Cauffman & Steinberg, 2000). Paradoxically, the emotional turmoil and confusion underlying adolescence often results in the exhibition of 'moody' teens who are prone to high-risk behaviours. Despite its wise nature, the thinking brain is not immune to the emotional whirlwind associated with puberty. Specifically, puberty results in the thinking brain experiencing a sharp re-orientation in its attention and focus, which is illustrated through the greater attention and importance adolescents demonstrate towards social relationships. Throughout puberty, adolescents concurrently experience a surge in their ability to understand social-emotional cues. The principle relationships that exist within adolescents' lives should ideally assist them to modulate emotional responses (Yurgelun - Todd, 2007). Holistically, pubertal hormones play a critical role in the reorganizing of neural circuitry and the optimal development of the social-emotional brain, with particular impact on neural circuits involved in processing emotions, risks, rewards, and social relationships (Spielberg, Olino, Forbes, & Dahl, 2014).



Despite the associated emotional turmoil and confusion, puberty ultimately empowers adolescents with the neural flexibility they need to develop abstract thinking and a flourishing imagination. It is in this period that adolescents require care, nurturance, and positive encouragement to embargo on the journey of self-discovery necessary to maintain an enduring sense of self throughout the inevitable highs and lows of salient social relationships. The interplay of increasing neural flexibility and influential social relationships results in formative learning experiences for adolescents. They begin to form mental blueprints (i.e., schemas) that prime the establishment of interpersonal traits and communication styles they will adhere to throughout adulthood. If provided with safe, supportive, oxytocin-filled conditions to engage in self-discovery learning, adolescents are able to achieve the healthy sense of belonging and identity, and the use of abstract thinking across different contexts and settings.

In fact, it is within these warm connections that adolescents' unconscious system, which remains active and significantly influences health behaviours over the course of one's life, begins to form (Schore & Schore, 2008). When adaptive styles of behaviour are met with acceptance and love, these positive experiences activate the reward center of an adolescent's brain, which creates a positive-feedback loop (Cozolino, 2014). Adolescents learn that it *feels good* to love and be loved and are motivated to advance habits which produce more oxytocin opportunities and dopamine surges. Adolescents' ego strength begins to flourish, which allows the holistic contemplation of behaviours and a consideration of both the rewards and risks of an action. Naturally, the increased use of these adaptive brain pathways demands an associated pruning of unused maladaptive pathways of behaviours. With each oxytocin opportunity offered within the period of adolescence, youth have the opportunity to establish the social-emotional

development and skills foundational for life long resilience. The specific social-emotional development and skills that are vital for adolescent resilience are outlined in the next section.

### **The Social-Emotional Development and Skills (SEDS) of Resilience**

Once all the key centers of the social-emotional brain have received enough oxytocin to achieve structural and functional development, adolescents are equipped to efficiently engage in social-emotional processing. In other words, they can now begin to develop the self-regulation needed to navigate the whirlwind of changes within both social and family relationships. With amply developed social-emotional processing, adolescents become adults who are capable of loving others and being loved. They welcome challenges, inevitably developing a good work ethic, establish a fundamental ability to connect with others, and have a desire to contribute to society as a whole (Freud, as cited in Cozolino, 2014).

The vast capacity for social-emotional learning and growth, coupled with the sharp increase of impulsivity and explorative behaviours makes adolescence a second window of opportunity where youth who have been impacted by complex trauma can be endowed with the SEDS required for lifelong wellbeing and success. Ironically, the surge in social-emotional processing that occurs during adolescence also leads to heightened susceptibility regarding increases in impulsive behaviours, often driven by the experience of intense emotions. These “emotional explosions are [the product of] neural hijackings” which occur when the regulator of adolescents’ social-emotional brain, the limbic system, becomes overwhelmed from social-emotional information received from the brain stem (Goleman, 2006, p. 14). During these moments, the limbic system calls for a brain-wide

lock-down, preventing the wise thinking brain from providing the information needed to maintain a state of balance (see Figure 2 for an illustration).

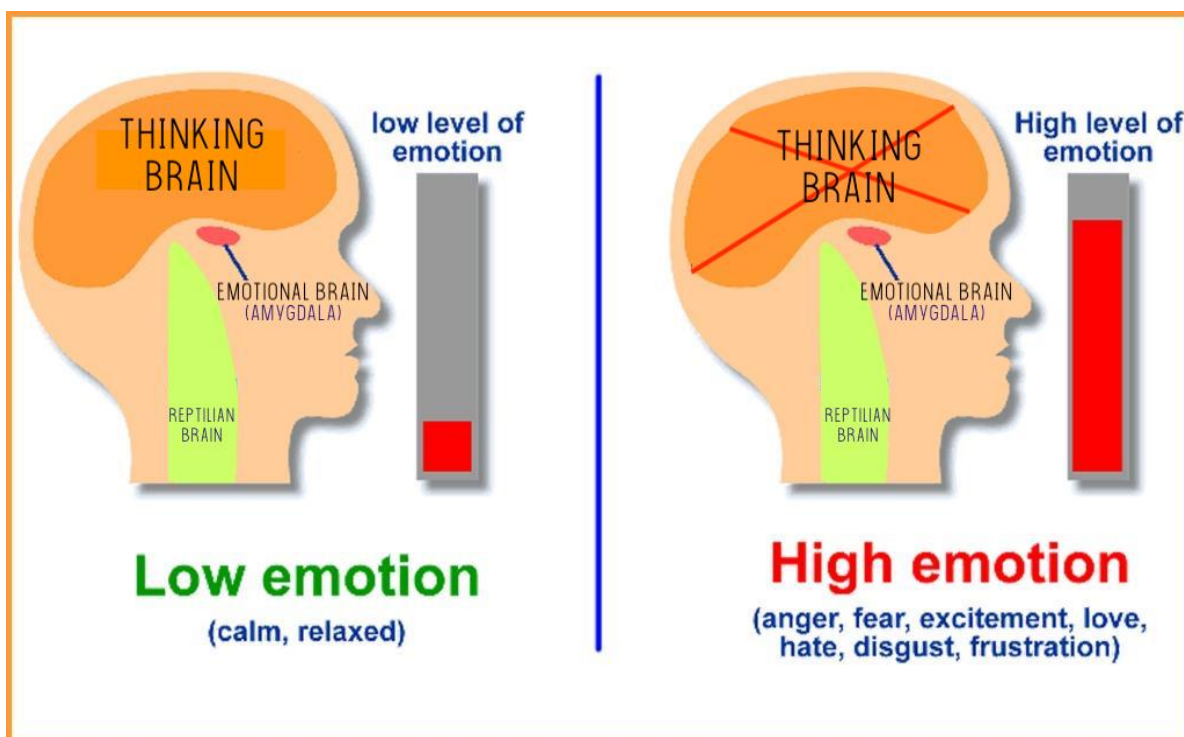


Figure 2. Behind the scenes of an emotional explosion (derived from Goleman, 2006)

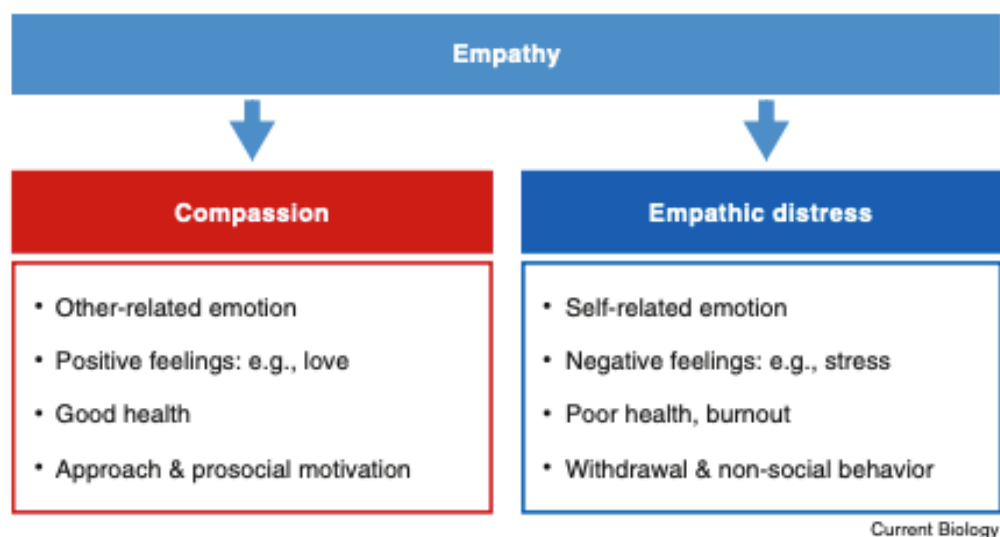
Noticeably, the unique period of adolescence presents youth with the opportunity to develop a specific skillset that will provide them with the foundation to maintain control during inevitable moments of emotional explosions and develop lifelong resilience. Precisely, this vital period yields the perfect opportunity for youth who have been impacted by complex trauma to acquire the ability to emotionally coordinate oneself, the ability to MIND oneself (i.e., meet internally to navigate development), and the capacity to play and connect with others. Holistically, these talents constitute the SEDS of resilience. The process of growing SEDS is not modulated, rather, this project outlines SEDS in the manner consistent with a typical developmental sequence. Nevertheless, SEDS can be grown in an iterative manner; that is, adolescents can develop SEDS in any order. Finally, the SEDS of resilience can be viewed as perennials, growing

and ever-changing. Adolescence poses the optimal period where SEDS can be planted, nourished, and bolstered to ensure their strong roots.

**Emotional coordination.** As adolescents develop, they may experience and identify emotions in complex social contexts. Thus, they require emotion coordination which allows them to consider multiple sources of information, understand a wide range of emotions, and ultimately regulate the expression of emotions in an adaptive manner (Kiel & Kalomiris, 2015). The coordination of emotion is understood as an integral process in socioemotional competence and mental health and has been deemed crucial for both interpersonal and intrapersonal functioning (Gross & Thompson, 2007). For the purpose of this project, the term emotional coordination is holistically conceptualized through adolescents' ability to:

- 1) develop and utilize emotion acknowledgement and appreciation skills, or the capacity to recognize, react to, and respect the multitude of diverse feelings within both ourselves and within others. To achieve such comprehension, adolescents must gain the capacity to acknowledge and appraise the body-based affect of both self and others (i.e., nonverbals, tone, facial expressions; Siegel, 2012). Gaining an intricate understanding of the distinction between emotions such as happiness, joy, contempt, sadness, fear, lust, jealousy, rage, frustration, and anger allows adolescents to use this emotional insight as building blocks for the remaining SEDS of resilience (Southam-Gerow, 2016).
- 2) develop and utilize compassion and subsequent empathy skills, or the ability and willingness to recognize, resonate, and appreciate others' emotions while remaining separate in order to offer meaningful help. The

skills of compassion and empathy are closely intertwined, yet remarkably disparate. Compassion is a component of empathy which focuses on positive feelings (outlined in Figure 3; Singer & Klimecki, 2014). As adolescents' ability to engage in emotional coordination matures, they become able to merge various sub-skills like emotional appreciation and empathy to assist in the recognition of nuanced emotional and social cues across various contexts, further emboldening their ability play and connect with others.



*Figure 3.* The intricate relationship between empathy and compassion. From “Empathy and Compassion,” by T. Singer and O. M. Klimecki, 2014, *Current Biology*, 24, p 875. Copyright 2014 by Elsevier. Reprinted with permission.

- 3) apply emotion acknowledgement and appreciation skills and engage in authentic emotional expression, or the outward illustration of one's internal states, thoughts, and actions in a manner that allows adolescents to develop self-awareness and truly feel seen, heard, and understood. Closely associated is the ability to harness intuition or listen to one's gut feelings without doubting due to external circumstances (Goleman, 2005). With

amply developed emotional-coordination skills, adolescents will have the self-coordination required to engage in appropriate emotional expression. For instance, this would be demonstrated in an adolescent who does not consistently over-share or exaggerates their emotions through crying everyday about reasonable stressors, like a broken scrunchie or a split in a loved boy-band. Instead, the adolescent would be able to engage in a healthy, balanced, contextually appropriate expressions of said emotions. Moreover, with well-developed emotional coordination, adolescents are able to know and experience the subjectivity of others – they can truly *feel* connected to someone other than themselves (Hill, 2015).

The optimal structural and functional development of the social-emotional brain plays the largest influence on adolescents' growth and maintenance of emotional coordination. However, adolescents also require salient inputs from the wise thinking brain in order to successfully achieve the insight and perspective needed for continued acknowledgement and appreciation of emotional and social cues, appropriate exhibition of emotions, and the ability to empathize with others. Thus, emotional expression, like all the SEDS of resilience, continues to grow as the thinking brain finishes its development throughout the period of adolescence. Nevertheless, the trial and error adolescents will engage in will help or hinder the eventual evolution of elaborated emotional coordination skills.

**Capacity to MIND oneself: Meeting internally to navigate development.** The phrase to MIND oneself encompasses the second and perhaps most crucial of the three SEDS of resilience. The ability to MIND oneself involves adolescents' ability to meet internally to navigate development. This calls for a knowledge of one's internal body and

requires the foundational skills of emotion awareness and emotion understanding to first be acquired in order to identify, gauge, and regulate how one feels in response to the world and in response to oneself. The capacity to MIND oneself also describes the ability to essentially reflect and is founded on the ‘chill center’ of the social-emotional brain, the DMN. To be able to MIND oneself is synonymous with the ability to mentalize, or imaginatively hold the mind of others within your own mind (Fonagy, Gergely, & Jurist, 2004). Mentalizing occurs when individuals think they know *what* others are thinking, or *why* someone performs a specific behaviour. Essentially, to MIND oneself describes the ability to acknowledge, appreciate, and eventually anticipate alternative perspectives and worldviews of others. To develop this skill, adolescents must first learn to engage in the process of metacognition, which simply entails thinking about thinking and feeling (Hill, 2015).

As adolescents’ endeavor to build the capacity to MIND themselves, they build the ability to be considerate of others while improving memory, creativity, and the self-awareness to further embolden previously developed emotional coordination skills. The complex social relationships that prevail throughout adolescence actually present exclusive opportunities wherein adolescents begin to engage in the process of reflection and metacognition, often surrounding emotionally charged experiences. As the practice of thinking about thinking becomes commonplace, adolescents experience a simultaneous growth in their imagination, and a subsequent development of the ability to begin thinking in more abstract patterns. Ultimately, adolescents are equipped to integrate the intentions of others with information gained from body-based affect to gain a clear understanding of what is happening and what that means to them (Siegel, 2012). Such a

skill is crucial during the period of adolescence, as youth navigate the aforementioned complex social relationships that will ultimately shape their view of the world.

Through an enhanced ability to MIND oneself, adolescents who have experienced complex trauma are able to develop a coherent story of their past and more importantly, themselves. As a result, adolescents are able to gain mental mastery over their emotions, allowing a shift from a negative to a positive view of themselves and a surge in self-esteem (Courtois & Ford, 2009). In turn, adolescents begin to learn how to approach and view a wide variety of situations using many different perspectives, rather than negative automatic ones they may have been taught in their childhood. The capacity to MIND oneself is grown when adolescents begin to learn to truly relax in solitude, without the use of technology. Such regular doses of solitude ultimately contribute to the healthy development of the social-emotional brain (Cozolino, 2104). In addition, the deliberate activation of the DMN that occurs as a by-product of everyday reflection coincides with an increase in the growth of the hippocampus, thereby supporting greater memory formation and neural flexibility in adolescence.

When adolescents are provided with the proper warm, attuned, and hopeful conditions to develop the ability to MIND oneself, they learn to generalize their rich sense of imagination and abstract thoughts to wider settings. They become better equipped to deal with the complexities faced within social hierarchies (e.g., bullying, dating), and harness the ability to create a well-developed safe space within their own selves. Moreover, learning to MIND oneself empowers adolescents to employ the art of metacognition across many other contexts, such as sports. Within the sporting realm, adolescent's capacity to MIND oneself can be applied and demonstrated through the practice of mental rehearsal and continuous provision of positive self-affirmations.



Activation of the DMN has also been associated with increases in pain tolerance and decreases in anxiety and depression for adolescents (Lanius et al., 2010). With an amply developed ability to MIND oneself comes an enduring sense of self-worth, which motivates adolescents to withstand the temptations of peer pressure and instead maintain control of the growth and strengthening of the brain pathways that become dominant behaviour in the future. Finally, the capacity to MIND oneself endows adolescents with the ability to engage in goal setting and maintain a sense of optimism and hope during hard times. This capacity to cultivate and maintain inner peace and acceptance is pivotal in developing the third skill within the SEDS of resilience.

**Ability to play and connect with others.** The final stage of SEDS development emphasizes the foundational phenomenon of play in order to ensure continued growth. Play has been said to be the strongest motivator for sustained behavioural change (Brown & Vaughan, 2009). Thus, through teaching adolescents to play and connect with others, we offer an opportunity for youth to further build crucial emotional coordination skills. The art of play simultaneously encourages youth to exhibit their flourishing sense of imagination and creativity in order to best offer a unique contribution to society. Essentially play helps adolescents develop socially, emotionally, physically, and cognitively.

In the physical realm, action-based play permits adolescents the ability to: (a) develop healthy bodies, (b) compose their fine and large motor skills, (c) learn stress management through the physical release of inner emotional turmoil and tension, (d) evolve coordination skills, (e) gain physical confidence, and (f) learn agility. In the emotional realm, play helps adolescents grow their ability to identify, experience, and understand a wide continuum of emotions, such as joy, sadness, frustration, contempt,

and jealousy (Pellis & Pellis, 2009). Adolescents can develop and practice empathy, persistence, self-regulation, self-confidence, and further mature through impulse control skills. In the social realm, play aids by providing a gentle means for adolescents to learn to: (a) cooperate, (b) negotiate, (c) collaborate, (d) socialize, (e) experience participation in rule formation, and (f) practice conflict resolution. Finally, in the cognitive realm, play presents unique opportunities for adolescents to further their ability to: (a) engage in scientific and mathematical thinking, (b) develop research and inquiry skills, (c) practice independent thinking, (d) enhance their language skills, and (e) grow their literacy skills. For adolescents who have not yet had adequate exposure to such growth fostering play in their childhood, the experience of learning rules and social cues in a safe setting allows a nuanced method of communication and expression (Ludy-Dobson & Perry, 2010; Porges, 2011; Siegel, 2012).

When adolescents can play with others, they're able to fundamentally see the world as safe. For youth who have experienced complex trauma, this shift aids their ability to work in teams to further oneself and ultimately survive. Much like the abstract thinking developed within their capacity to MIND themselves, the ability to play and connect with others can be generalized to every facet of adolescents' lives. Perhaps most importantly, a fully developed capacity to play and connect with others provides adolescents with non-threatening opportunities to begin and continue the journey of learning to trust others. This rejuvenated ability to trust and depend on others concurrently fulfills adolescents' fundamental human desire to belong and attach to another (Szalavitz & Perry, 2010). For adolescents who have experienced complex trauma, these growth-fostering relationships will act as protective factors that ultimately

water their SEDS of resilience, encourage the formation of novel memory building, and ignite the process of post-traumatic growth.

With an amply developed capacity to play and connect with others, adolescents would possess the matured emotional coordination skills required to experience challenges without experiencing emotional explosions. Rather, exposure to such playful learning experiences would equip them with a rich set of both emotion and problem-focused coping skills (Sarafino et al., 2015). Irrevocably, the occurrence of complex trauma poses the greatest risk to adolescents' lifelong well-being due to its obstruction in the development the SEDS of resilience. The intersection between complex trauma and the development of SEDS is explored in the next section.

### **Withering the SEDS of Resilience: The Hindrance of Complex Trauma**

The term complex trauma encompasses the long-term impact experienced by adolescents after exposure to multiple, traumatic events, usually of an invasive, interpersonal nature (Cook et al., 2005). For the purpose of this project, complex trauma will be conceptualized as a holistic umbrella term which simultaneously encompasses concepts such as developmental trauma, early childhood trauma, or adverse childhood experiences (ACES). Experiences often thought of as 'common', such as childhood bullying and peer victimization, isolation and peer rejection, and poverty and deprivation also fall under the umbrella of complex trauma, due to their negative long-term impact on social-emotional development (Finkelhor, Shattuck, Turner, & Hamby, 2015). Due to nuances in childhood experiences, each adolescent will display a range of reactions in response to exposure to potentially traumatic events (van der Kolk, 2005). The widespread occurrence of complex trauma has recently been highlighted by several researchers across the fields of child development and neuroscience. Not surprisingly,

adolescents who are subjected to the experience of complex trauma often develop severe mental and physical difficulties, which continue to exacerbate throughout the period of adolescence and ultimately obstruct a healthy, happy adulthood (Anda et al., 1999; Anisman, 2016). To highlight the value of the PRESENCE model, the convoluted intersection between complex trauma and the growth of adolescents' SEDS of resilience must first be explored.

The withering of SEDS that occurs following exposure to complex trauma begins at a physiological level and results in the underdevelopment of an adolescents' brain. The cold, callous environments that often accompany complex trauma lack the positivity and affectionate attachments needed to initiate optimal structural and functional development of the social-emotional brain. In such environments, adolescents do not receive the key oxytocin opportunities required, and instead consistently experience significant levels of the stress hormone, cortisol. Unlike dopamine, oxytocin, and other positive hormones, cortisol stifles optimal brain development by instead creating extremely weak, if any, neural pathways between the key centers of the social emotional brain (Center on the Developing Child at Harvard University, 2011). Without this physiological foundation, adolescents are unable to engage in the in-depth exploration of one's inner self required for the formation of the SEDS of resilience. In contrast, adolescents begin to adopt hypersensitive responses to emotions and actions of both themselves and others. Having never experienced authentic connection, adolescents who have been exposed to complex trauma learn to view the world and those within it as fundamentally unsafe.

Without having gained the SEDS of resilience in adolescence, youth are likely to experience higher baseline blood cortisol levels, which has found to be a precursor to Alzheimer's disease and other forms of dementia (Lanius et al., 2010). Associated with

these higher baseline blood cortisol levels is a decrease in opportunities to engage early instances of social-emotional processing and competence to engrain these patterns for adulthood, leading to an eventual obstruction in the progression of the social-emotional brain. Correspondingly, adolescents who have faced exposure to complex trauma experience significant struggles in establishing the ability to emotionally coordinate. Having never learnt to work through the emotional flurries of early childhood, adolescents who have been exposed to complex trauma instead adopt the mindset that they are unworthy or undeserving of love. The intense pain and emotional havoc accompanying such distorted thoughts often spurs a fundamental sense of shame, and ignites a decrease in attentional control capacity, stifling adolescent's ability to genuinely grow the SEDS of resilience (Schoore, 2016).

The threatening worldview instilled within traumatized adolescents, coupled with the tendency to engage in tension-reducing behaviours forms a crippling fear of abandonment, which paradoxically is demonstrated through a cycle of self-sabotaging behaviours within relationships. Concerningly, the inability to control one's understanding, expression, and experience of emotions has been identified as an underlying diagnostic criterion for several disorders and diagnoses found in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013)*. Examples include but are not limited to: a) disruptive, impulse-control, and conduct disorders; b) somatic symptom and related disorders; and, c) bipolar and related disorders.

The absence of the ability to MIND oneself leads to heavy impediments in the development of abstract reasoning, visual perception, attention, and executive function skills. Adolescents who lack this crucial capacity often struggle with feelings of dwindled

control and insight surrounding what is happening inside their bodies and the root of felt emotions or thoughts. As a response to the high levels of cortisol that have registered as normal within the social-emotional brain, a self-depreciating mindset is instilled within youth. This self-depreciating mindset inevitably leads to an external locus of control and an accompanying sense of learned helplessness (Yeager & Dweck, 2012). Essentially, adolescents learn to find and crave safety in chaos. For some, the chaos is the only pathway to feel the needed internal sense of calm or the ability to tune in and understand what is going on. This happens because of brain-based learning, and state-dependent learning, wherein environmental cues help the thinking brain meet, discuss, and collaborate with the reptilian brain (Ormrod, 2016). Unfortunately, having only absorbed negative information and messages founding the basis of their core beliefs, the thinking brain of adolescents who have experienced complex trauma is more wicked than wise. Through providing wrong information about what may or may not be a threat, the thinking brain aggravates the naturally anxious reptilian brain, whose primary focus is survival and safety. Once adolescents' experience exposure to violence, their ability to engage in thinking that is future orientated is stunted, coupled with a decrease in impulse-control and self-regulation (Mohanani, King, Shulman, Cauffman, & Chassin, 2015). Overtime, the absence of foundational self-coordination skills negatively impacts adolescents' personality, compassion, and social attachment and functioning (Cozolino, 2014; Van der Kolk, 2005).

Gradually, these complex-trauma-fuelled maladaptive behaviours obscure adolescents' power to build the shaping connections required to launch the ability to play and connect with others. The large amount of pruning occurs during adolescence may often exacerbate the negative impact of complex trauma on the adolescent social-

emotional brain. Unlike the neural flexibility that amounts from adolescents' unique brain growth during puberty, the experience of complex trauma causes the adolescent brain to become 'stuck' in its current stage of development (van der Kolk, 2014). The adolescents' ability to engage in rich social-learning is instead replaced with a limited ability to simply reproduce behaviours that have been proven to help survival. Without having developed the adequate SEDS of resilience, adolescents risk continuation of these automatic behaviours, despite their social acceptability or the associated risk. When deprived of the safe environments and affectionate attachments that spur the process of social-emotional information processing, youth are in jeopardy of a life where emotional explosions become the only means they come to know for the release of their inner turmoil. Complex trauma results in an increase of tension-reducing behavior, which is illustrated in traumatized adolescents' tendency to turn to external methods (e.g., self-harming, aggression, sexual acting- out, suicide threats) in order to distract, soothe, or otherwise reduce inner tension or distress (Kerig & Becker, 2010).

The unique and diverse effects of complex trauma underscore the need for parents, practitioners, and other sources of relationship in adolescents' lives (e.g., front line staff and teachers) to have an easily accessible, trauma-informed pathway. As a result, individuals would be empowered to initiate the establishment of the growth-fostering environments adolescents require for post-traumatic growth. Further, these formative sources of relationship within an adolescent's life, will require an approachable medium to offer salience nurturance and guidance as youth navigate the social-emotional development predominant throughout adolescence; this is the inherent objective of this project and the PRESENCE framework.

## **The PRESENCE Framework: Nourishing the SEDS of Resilience**

**The healing power of affectionate attachments.** Indubitably, humans are born with the innate instinct and capacity to love (Cozolino, 2014). We are driven to establish connections wherein this love can be communicated and continuously conveyed. These formative connections – often referred to as attachments – become our primary vehicle through which one can fulfill inherent growth-needs (Ormrod, 2016). Attachment is not just a connection between two people; it is a bond that enables individuals to fulfill the innate human need for connection, belonging, relatedness, identity, and arousal (Szalavitz & Perry, 2010). We attach in order to survive; adolescents' initial attachment fosters survival through guaranteed proximity, which safeguards our desires to have our basic physiological needs met (Bowlby, 1973 as cited in Ainsworth, Blehar, Waters, & Walls, 2015). The attachments prevalent within an adolescents' life also provides an implicit blueprint, or *internal working model* that later dictates and disseminates the ability to form growth-fostering relationships (Ainsworth, 1989). Bowlby (1973, as cited in Hill, 2015) initially categorized attachment as a primal behavioural system, which was thought to be activated by fear. Panksepp and Biven (2012) further illustrated the function of the attachment system, highlighting how neural circuits responsible for seeking behaviours and positive reinforcement predominantly controlled and incited attachment behaviours. Simply put, the brain is wired to seek connections with others in order to feel reward. Subsequently, Schore (2016) later conceptualized attachment as a psychoneurobiological system that ultimately controls the development of self-regulation (Hill, 2015).

Adolescents' childhood experiences, which are inherently dictated by relational 'rules' implicitly instilled within affectionate attachments, ultimately sculpt and mediate the structure and function of the adolescent brain (Schore, 2016). The nurturance



adolescents receive from affectionate attachments endows them with the neural pathways needed for the development of the SEDS of the resilience. Moreover, youth begin to gain the sense of belonging and intimacy that allows feelings of love, self-worth, self-competence, and ultimately, the SEDS of resilience. Affectionate attachments also equip adolescents with an internal locus of control, or the mentality that they have the ability, capacity, and support needed to effectively commandeer their own lives (Ormrod, 2016). Through the formation of affectionate attachments, adolescents are equipped with the baseline sense of security required to activate the brain's 'exploration system,' which in turn leads to heightened self-efficacy (Hill, 2015).

The powerful regulating effects of affectionate attachments—mediated by various key neural networks in the brain—are at the core of relationally based protective mechanisms that help adolescents survive and thrive following complex trauma. Adolescents who have few positive relational interactions during or after trauma have a much more difficult time decreasing the trauma-induced activation of the stress response systems (Ludy-Dobson & Perry, 2010). The presence of just one positive relationship within the life of an adolescent who exhibits high-risk behaviours has been equated with a longer life expectancy. These findings remained consistent despite an adolescents' socioeconomic status, substance abuse behaviours, and exercise behaviours (Lanius et al. 2010). While good relationships support cognitive and social-emotional development leading to an increase in optimism and self-esteem as well as an increase in social support and guidance, it is also evident that bad relationships weather adolescent social, emotional, and cognitive development (Cozolino, 2014). Bad relationships, or those that lack crucial oxytocin opportunities, are at the core of the experience of complex trauma. Bad relationship simultaneously obstruct adolescents' ability to engage in social-

emotional processing and the planting, nourishing, and sustaining of SEDS into adulthood.

Acknowledging the healing power of human relationships, the proposed PRESENCE framework is holistic, relationship-based, and aims to address the widespread impacts of complex trauma across adolescence.

The PRESENCE model aims to illuminate the eight foundational components which I believe best illustrate why individuals' presence can be a present. The objectives of the presence model include:

- Decrease adolescent shame
- Facilitate the offering of oxytocin opportunities to assist adolescents in constructing affectionate attachments and allowing the foundational brain growth needed to plant the SEDS of resilience
- Assist adolescents through planting, nourishing, and sustaining the SEDS of resilience (emotional coordination, the ability to MIND oneself, and the capacity to play and connect with others)

In the next sections, the presence model is disseminated to outline its use in undoing the dreadful impacts of complex trauma and planting, nourishing, and sustaining adolescents' SEDS of resilience. Appendix C includes a handout intended to facilitate the phasic implementation of the PRESENCE framework and instigate the establishment of SEDS with traumatized adolescents.

**Phase one: Feeling safe.** To begin washing away the negative impacts that have accumulated in response to complex trauma, phase one of the PRESENCE model encourages individuals (herein referred to as cultivators) to be positively playful,

receptive and reciprocal, and empathically attuned when supporting traumatized adolescents.

***Positively playful.*** The PRESENCE framework defines play as a voluntary activity that causes the feeling of pleasure (Pellis & Pellis, 2009). To be playful is to make the voluntary conscious choice to use play as a vehicle to offer oxytocin moments. Play activates the attachment system, which initiates the process of helping adolescents modify the dangerous view of the world they have come to know. The act of formatting novel internal working models and changing the blueprints of what a relationship entails is best done in a safe and positive environment that the act of play naturally cultivates. Play allows significant emotional synchrony which activates mirror neurons in both the cultivator of SEDS and the adolescent, allowing for future empathic attunement (Schoore & Schoore, 2008). Within her practice at CTH, Tracy embodies the salience of being positively playful. She described the “constant little windows of opportunity” play enabled, highlighting how these playful exchanges helped the staff create relationships that encouraged joint experiences grounded within the present moment. Play can be used as a motivator for sustained behavioural change by providing the non-threatening and collaborative platform needed to best nurture adolescents. Finally, play grants adolescents with a nuanced language of communication and expression. Like any language used within conversation, play requires any cultivator of SEDS to concurrently remain receptive and reciprocal.

***Receptive and reciprocal.*** Negative relational experiences further prime adolescents’ desire to connect with others (Perry, 2003). The aforementioned surge in the growth of the reward center within the adolescent brain results in an elevated drive to connect with others (Spielberg et al., 2014). Concurrently, cultivators need to ensure they remain open

and willing to return such invitations of connection to allow neural stimulation and the growth of the social-emotional brain and the subsequent SEDS of resilience. Play is a salient avenue to demonstrate receptivity and reciprocity. Encouraging adolescents to lead in play demonstrates that one respects and values adolescents' worldviews and the ways of coping they have adopted thus far (Cozolino, 2014). At CTH, Tracy exemplifies how one can demonstrate a reciprocal relationship noting she's always sure she responds to questions adolescents ask her, and always willing to share. She notes, "... the way best way of making a relationship is being open to it yourself...". Congruently, the mirror neuron system found within the social-emotional brains of all humans are reflexive, implicit, and obligatory (Siegel, 2012). This means cultivators are inherently endowed with the tools to exercise receptivity and reciprocity, as well as communicate to adolescents that they are safe. Such messages help to enhance a sense of belonging, leading to cohesion within the budding relationship and setting the scene for the fundamental empathic attunement needed to begin modifying adolescents' negative blueprints of relationships and thus empowers the development of SEDS.

*Empathically attuned.* Empathic responding involves providing support and acknowledging adolescents' perspective through intersubjective moments (Sarafino et al., 2015). Cultivators should use such communication methods with adolescents to help reiterate that their reality has been acknowledged and supported, while also helping to mend and decrease the negative shame states, learnt fear of abandonment, and the core beliefs developed from rejection (Hill, 2015). Through using both verbal and non-verbal communication for empathic attunement, adolescents engage in the construction of forming novel implicit and explicit memory networks across all key centers of the social-emotional brain (Siegel, 2012). Precisely, adolescents are presented the opportunity to

build new memories and blueprints of relationships, which spurs a modification in communication patterns between the key centers of the social-emotional brain. Establishment of these novel pathways of memory simultaneously endows clients with the ability to choose how they want to act, rather than remaining at the mercy of being stuck in a repetitive cycle of tension-reducing behaviour.

With this inherited sense of self-control and self-understanding also comes an enhanced sense of coherence and optimism, which are vital factors in withstanding stressors or traumatic events that potentially lead to pathological conditions (Sarafino et al., 2015). Harmoniously, Tracy noted the immense value of the use of empathic attunement within CTH:

So it's more about just attuning to the child, attuning to the child, attuning to the child over and over and over, and then eventually we can start working that trauma piece...[with attunement] you're helping them understand what was happening and when you attune to them and say, 'oh my gosh I would feel so sad if that happened to me', or 'I'm so sorry that happened to you' all of a sudden you're giving them a tool kit for emotion that [a youth actually] understands... So that tool kit of emotions helps them develop because all they possibly had when they came into therapy is the tool kit of emotional unwellness, which encouraged them to think that they don't deserve it [love] that they're awful and should be ashamed.

Empathically attuned relationships enhance adolescent's capacity to learn through epitomizing the notion that, as humans, "we feel...therefore we learn" (Immordino-Yang, & Damasio, 2007, p. 3). Cultivators need to teach adolescents to not fear connection and instead gravitate towards positivity and love. When working to plant the SEDS of

resilience within adolescents, one should adopt the role of a translator, by using curiosity and play to verbalize youth's heard and felt emotions. In facilitating support of adolescents' ability to socially and emotionally communicate, cultivators are also able to begin planting the fundamental seeds of resilience (Rizzolatti & Craighero, 2004).

**Planting the SEDS of resilience in phase one.** When individuals strive to demonstrate behaviours that are positively playful, receptive yet reciprocal, and empathically attuned, adolescents are able to feel as if they are needed and wanted. Phase one relies on the act of neuroception, or the ability to intuitively acknowledge and understand the mind of others (Porges, 2011). The oxytocin opportunities cultivated throughout phase one lend adolescents' pieces of evidence that can be used to challenge many of the negative messages and core beliefs contributing to their self-deprecating mindset. By having an individual who can gently voice their felt inner turmoil, adolescents are able to begin working through instances of emotional flurries and instead gain agency over which emotion they want to display. Through play, cultivators have the ability to use touch, rhythm, and breathing which works to instill a fundamental sense of calmness within adolescence (Van der Kolk, 2014). As a result of this newfound sense of calm, the social-emotional brain can resume its work as a regulator, rather than as an emergency responder. Further, through the use of neuroception, cultivators can use oxytocin opportunities to teach adolescents skills for social buffering, comprehending social emotions, and switching between a self-defensive state to a social-engagement state (Porges, 2011).

Via gaining a new understanding of what relationships constitute and the benefits offered, adolescents ideally will be able to navigate instances of peer pressure with more control due to an decrease in their need to derive self-worth from these peer relationships.

This decrease in youth dependency on peer gratification will ideally relate to a decrease in impulsive actions and behaviours. Adolescents will gain a heightened ability to emotionally coordinate, encouraging the thorough deliberation and holistic reflection of actions and behaviours. Equipped with a novel understanding of their story, adolescents concurrently learn to MIND oneself through consideration of alternative perspectives using abstract thought and metacognition. Phase two further matures the developmental trajectory of the SEDS of resilience.

**Phase two: Knowing safe.** Once the foundation has been set to ensure a strong growth-fostering relationship, cultivators work to further encourage a strong sense of self in adolescents. Phase two of the PRESENCE model encourages individuals to use self-awareness for scaffolding, empathizing, and encouraging emotional expression, and to non-judgementally nurture.

*Self-awareness for scaffolding.* When growing the SEDS for development, cultivators must know the type of social-emotional information that is being communicated to adolescents. The ability to turn within and reflect to instill self-awareness will enable proper modeling and further development of emotional coordination skills for both cultivators and adolescents. Self-awareness allows cultivators to monitor their own reactions and take responsibility for any triggers that may arise and impede the formation of growth-fostering relationships with traumatized adolescents. Epitomizing the salience of cultivator self-awareness, Tracy asserted

My job and my goal is for [youth] to know that I don't expect [them] to trust me I know [they] don't know me, I know [they] don't want to share your stuff with me...my job is to help you want to do that and the client is in the driving seat at that point not me, I don't care how much knowledge I have or how much training

I have I don't know one ounce of anything about them and they're the expert, and my job is to try and figure out how to get into their world where they want me in their world.

Cultivators should inherently always ponder thoughts like “how is my presence, a present right now?” Acknowledging the inherent ability to offer reciprocity within relationships, cultivators must ensure their own internal well-being so as to ‘heart and not hurt’ (Brown, 2012). Tracy articulated the value of self-awareness when working with youth:

You have to be secure enough in yourself to go with that child on that little journey, and then you can follow it back and lead it back to where you need it to be, to be doing effective trauma work but you must be paced, you must pace, you always have to engage in being playful and accepting and being curious.

With this fundamental sense of self-awareness, cultivators slowly teach adolescents how to deal with both positive and negative occurrences within a relationship without experiencing emotional flurries or reverting to the need for tension-reducing behaviors. As adolescents learn novel relationship patterns, cultivators can use the developed safety within the relationship to scaffold both emotion and problem-focused coping skills (Ormrod, 2016; Sarafino et al., 2015). Using such methods, adolescents develop the crucial SEDS of resilience at a pace best congruent with their unique learning style.

***Empathize and encourage emotional expression.*** During the stage of adolescence, emotional responses have not yet been stored in the long-term memory center of the social-emotional brain. The lack of formalized neural pathways causes adolescents to explore a variety of styles and methods of emotional expression (Yurgelun-Todd, 2007). In turn, adolescents are often labelled as moody, or overly emotional. In these times of emotional fluctuation, cultivators can promote the value of



empathy through empathic attunement and education encouraged in phase one. For example, cultivators can teach adolescents that emotions are simply sources of information, which signify our need to react to or further ponder our internal or external environments. Cultivators can use empathy to normalize emotional explosions and explore their roots by welcoming such occurrences. In her practice at CTH, Tracy describes how she uses her relationship to encourage emotional expression:

Normally that child would have raged right there and that child actually just found their tears... their healthy tears, and I saw it...and I let them know that those healthy tears are how they heal and how they grow, and that they should not be ashamed of the tears...

Moreover, cultivators can help challenge adolescents' negative core beliefs by meeting their hostility or negative attitude with kindness, empathy, and compassion to help teach a new blueprint of others (Cozolino, 2014). By means of using a warm posture and tone, cultivators can communicate empathy consistently. Tracy described her integration of such practices, describing how she tells clients "...I'll sit with this with you, and uh if you say you're going to push me away and I tell you I care about you... I mean it... so it's easy to just be here...".

Adolescents are concurrently permitted to engage in subsequent thinking about their behaviour and emotion, which instigates the act of metacognition, or thinking about thinking that forms the foundation of the ability to MIND oneself. Through normalizing statements such as "[you] are allowed to feel scared... and [you are] allowed to say that did frighten me, I was afraid," Tracy identifies the ability for cultivators to teach adolescents to use emotional expression for empowerment. When faced with similar

stressors in the future, adolescents' thinking brain will be able to evaluate the information and consider less emotionally arousing perspectives.

*Non-judgementally nurture.* Cultivators should use nurturance to help develop a healthy and balanced sense of self in adolescents. Understanding the vast amount of growth that occurs within the adolescent brain, cultivators should work to nurture, rather than suffocate, adolescents' authentic expression of their internal states. Through allowing openness and reciprocity to underlie the relationship, cultivators can be a regulating influence to help adolescents navigate the surge of various hormones that accompany the development of the social-emotional brain. Highlighting the need to adopt a non-judgemental, neutral mindset, Tracy noted, "We don't go and expect them to trust us, we go in expecting that our job is to earn their trust, and that is very hard job to do because they have every reason not to [trust or] believe in us." Simple gestures like offering a soothing face, and a genuine non-judgmental smile help to increase levels of dopamine in the adolescent brain (Maté, 2000). Adolescents learn to associate relationships with love and feelings of self-worth, allowing trust to form. For Tracy, the formation of trust is the most crucial factor in working to heal adolescents who have been impacted by complex trauma.

They may say they trust you, but they don't believe, they don't believe they're worth love and if you can change their perception of trust, all of a sudden you have changed their sense of self. They all of a sudden believe that you're worth trust, and that means they are worth loving.

Ensuring ample self-awareness to identify one's own biases will help cultivators remain non-judgemental when engaging in the joint exploration of adolescents' inner turmoil. Tracy exemplifies how one should be when engaging in such exploration, crediting her

ability to “... [find comfort] in sitting and being present and enjoying the fact that they’re telling me whatever it is they want to tell me...”.

**Nourishing the SEDS of resilience in phase two.** Cultivators can assist the development of SEDS in phase two by helping to reframe the adolescent’s view of vulnerability, tears, and sadness. For adolescent males, especially, this encouragement of emotional expression is crucial to help counteract dominant messages of masculinity prominent within society. Fuelled by an inherent sense of self-awareness, cultivators can use the mirror neuron system to be outward in their own emotional expression and encourage the same exploration and expression within adolescents (Rizzolatti & Craighero, 2004). Continued exploration will help adolescents practice emotional coordination. Furthermore, cultivators can elicit the skills of scaffolding, non-judgmentally nurturing, and exhibiting empathy to motivate novel methods of finding calm for adolescents who have been exposed to complex trauma. Engaging in conversations that encourage adolescents to consider things like “what *does* it mean for me to *chill*? And *how* can I *genuinely chill*?” further emboldens the capacity to MIND oneself. Tracy considers such practices a playful way to help adolescents to feel secure in the people around them. Accordingly, the safety communicated by using kind words helps to bolster body regulation for adolescents, stress regulation, the identification and appropriate responding to social cues, and the development of empathy and insight (Fosha, Siegel, & Solomon, 2009; Lanius et al., 2010). The final phase encourages the implementation of the SEDS of resilience, to further establish growth-fostering relationships.

**Phase three: Playing safe.** The final stage of the PRESENCE model aims to holistically endow adolescents with the SEDS of resilience. In phase three of the

PRESENCE model, individuals are encouraged to be curious yet compassionate, and endorse adolescent independence and imagination.

*Curious yet compassionate.* When adolescents experience a genuine experience of love and care, there is a decreased activation of their fear system (van der Kolk, 2014). As a result, the social-emotional brain can retire from the side job of being an emergency responder, and instead work to boost its capacity as a regulator. Love and care provide adolescents with a relief from the learnt need to continuously search the outer world for threats or obstructions to survival. When cultivators engage adolescents in a caring manner, adolescents are permitted to act on their natural instinct to connect and play and therefore grow the capacity to play and connect with others (Panksepp & Biven, 2012). The act of being curious, yet compassionate, entails a gentle exploration of adolescents' past and present, and encourages imagination of the future that adolescents would like to live. When working with adolescents who have been exposed to complex trauma at CTH, Tracy relies on the use of open-ended questions, explaining "...you want to ask the questions so that you can get to know that person...". When cultivators display authentic interest and curiosity surrounding thoughts and feelings, adolescents are motivated to engage in reflection to better understand their intentions behind their behaviour (Ormrod, 2016). Curiosity stimulates the adolescent social-emotional brain, allowing a rich sense of imagination to flourish (van der Kolk, 2014). Only when compassion is present will people allow themselves to see the truth. Tracy reminds adults of the value of compassion in everyday interactions with adolescents, stating:

Because we are so busy thinking that we have to guide [adolescents] in what they do wrong and teach them, we forget that we have to teach them every little

moment what they do right and let them [develop] that narrative and encompass that because it is a part of their story too...

***Endorses independence and imagination.*** Once equipped with an enduring sense of imagination and consideration of alternative perspectives, adolescents can employ conscious control of attention to modulate common feelings such as anxiety and further progress acquired emotional coordination skills. As adolescents evolve the habit of challenging negative thoughts and MINDing oneself, they're able to translate the use of key skills like metacognition, empathy, abstract thinking, and imagination across all domains of their lives. Cultivators can encourage imagination through safely challenging adolescents by providing a rich and diverse amount of information intended to spur creative thinking. Tracy compares this journey of independence to the journey of learning to swim:

Treading water keeps you alive, but it doesn't keep you living. It keeps you alive in the water. I want them to swim to shore... I want them to get, you know, support and help and belief they can swim and get to shore... and [that] when you do get to shore then you can bathe in the sun, and sit there and enjoy it... and realize that you deserve more than treading water! You deserve to live, to be happy, and to have quality of life.

In learning to be safely challenged, adolescents gain ego strength. Their abilities to emotionally coordinate, MIND oneself, and play and connect with others are ripened through learning to be cognitively challenged and emotionally aroused, yet remain in a calm state that allows the social-emotional brain to facilitate conversation between the thinking reptilian brain in times of turmoil. Cultivators must balance the use of non-judgemental nurturance, and the encouragement of independence to allow adolescents to

engage in formative bouts of experience-dependent learning (Casey et al., 2010).

Adolescent independence can be encouraged when cultivators do simple things like seek adolescent opinions in relevant matters. Such collaboration helps to instill a sense of self-identity, while increasing goal-directed behaviour and the desire to meaningfully impact society.

**Sustaining the SEDS of resilience in phase three.** Cultivators can work to encourage the continued maintenance and growth of the SEDS of resilience in phase three by teaching adolescents how to cultivate arousal, motivation, interest, passion, rather than engage in risky and dangerous behaviours (Center on the Developing Child at Harvard University, 2011). Further, phase three emphasizes the ability to establish the growth-fostering relationships that best increase knowledge and internalized motivation in the future (Ormrod, 2016). The use of curiosity can develop the needed sense of vulnerability within youth that promotes the identification of moments when they are and are not presenting their authentic self (Brown, 2012). With such intimate knowledge of oneself, adolescents begin to actively fine-tune their developed SEDS of resilience, ensuring their ability to withstand any future calamity. The cultivation of a well-developed sense of independence and imagination endows adolescents with the ability to maintain a sense of personal existence, self-awareness, and self-other boundaries that is relatively stable across affects, situations, and interactions with other people (Lanius et al., 2010). This unwavering sense of self is pivotal in ensuring life-long health, happiness, and well-being of adolescents who may have previously thought to be impossible as a result of exposure to complex trauma. Tracy described the importance of ensuring the SEDS of resilience are instilled within her work at CTH:

The most important therapeutic outcome is for them to believe they deserve better and to demand it in their future. That's what you want...is that healthy child who can say no. No I'm lovable and you don't get to do this to me. So, that's certainly the most important therapeutic goal in my mind.... is get them past their trauma, and not feeling like they have to be stuck in it.

The PRESENCE framework encourages individuals working to support adolescents to: (a) be positively playful; (b) receptive and reciprocal; (c) empathically attuned; (d) as well as utilize self-awareness to; (e) encourage and exhibit empathy; (f) in a non-judgemental and nurturing; (g) and curious yet compassionate manner; (h) and genuinely endorse independence and imagination. Following the experience of complex trauma, these eight tenets of the PRESENCE framework assist in decreasing adolescents' sense of shame. Through the implementation of the PRESENCE model, adolescents are able to gain the fundamental skills needed to successfully navigate relationships with an enduring sense of self, and self-worth.

The intended purpose of this chapter was to present an overview of the literature and empirical data collected in the process of answering the research question which motivates this project. The PRESENCE framework was dissected, and its use in planting, nourishing, and sustaining the SEDS of resilience was highlighted. The next chapter provides a discussion surrounding the project's strengths, limitations, and implications.

## Chapter Four: Discussion

The purpose of this chapter is to provide a summary of this project, its implications, strengths, limitations, and future areas of research. The chapter begins with a discussion of core implications of this project and offers some tailored suggestions for adolescents, parents, teachers, and mental health practitioners. General recommendations are presented. The chapter then explores the projects strengths and limitations. Areas of future research are also proposed. The chapter ends with a section that contains closing remarks and a conclusion.

### Implications and Recommendations

This project and the associated PRESENCE framework hold many implications, with the most important being the reminder that one's presence is truly a presence. This project supports the idea that relationships that are positive and warm can be used as a pathway to help adolescents experience meaningful change and growth. The project shows that including tenets of the PRESENCE model allows traumatized adolescents to gain experiences of being accepted, celebrated, and loved for who they are, and not what they have done. It is anticipated that this project will remind individuals, despite their role or setting, to choose connection instead of condemnation. Tailored implications for parents, teachers, and mental health practitioners are briefly discussed in the next section.

**Adolescents.** It is anticipated that this project would have important implications and applications for adolescents who have experienced complex trauma. If employed, the PRESENCE framework would allow an enhancement in the quality of services offered to adolescents who are struggling emotionally, psychologically, physiologically, and behaviourally post exposure to complex trauma. The information provided within this project is intended to offer clarity for adolescents, which could be achieved via the



development and enhancement of the SEDS of resilience. The background information provided in chapter one could help motivate traumatized adolescents who are cognitively able and willing to begin engaging in the self-reflection practices needed to spark self-awareness, self-understanding, and ultimately, self-control. It is my hope that the information provided within chapter three encourages traumatized adolescents to consider the notion that they can begin to choose how they live, despite past experiences. The PRESENCE framework and the associated SEDS of resilience should provide traumatized adolescents with increasing opportunities to learn how to react or behave differently, trust others, and welcome the love they deserve.

**Parents.** It is anticipated that this project would have numerous positive implications for parents of adolescents who have experienced complex trauma. Overall, the information that was explored and included within the project and the PRESENCE framework would allow parents and other family members to gain an enhanced understanding of the multi-layered impacts of exposure to complex trauma. With this increased understanding of complex trauma, parents could make conscious efforts to employ nurturance and empathy, rather than disciplinary actions when dealing with adolescents' impulsive behaviours.

The provided information and PRESENCE framework should encourage parents to shift from the use of time-outs and grounding practices and instead demonstrate strategic emotional coordination skills. Within this shift, parents could use questions such as "What were you thinking? What were you feeling? What was going on inside? What happened right before, or right after, that caused you to ...?". The intended by-product of intertwining the PRESENCE framework within parenting practices would be to instill the capacity to MIND oneself within adolescents. Responding with non-judgemental

nurturance teaches adolescents unconditional acceptance and presents oxytocin opportunities for guidance and growth.

Futhermore, this project highlights the need for parents and other family members of traumatized adolescents to ensure they are engaged in self-reflection. The provided information demonstrated the integral role of self-awareness in the process of scaffolding the SEDS of resilience. Parents who are able to allow vulnerability for self-awareness will be uniquely equipped in overcoming personal emotional barriers, which may otherwise occlude the planting, nourishment, or sustainment of adolescents' SEDS.

**Teachers.** It is anticipated that this project would encourage teachers to contemplate the applicability of attachment theory and concepts like adverse childhood experiences within a classroom setting. A teacher who demonstrates warmth, positivity, compassion, or any of the eight tenets of the PRESENCE framework is one that will be able to whole-heartedly engage adolescents and provide them the education needed to change unhealthy learnt behaviours. The information provided in this project substantiates the notion that teachers who take the time to connect are able to facilitate formative and life-long learning for adolescents (Ormrod, 2016). It is my hope that this project will inspire teachers, even if just one, to take the time and make the effort to adopt a compassionate mindset when dealing with students who have been deemed disruptive, or problematic. Further, this project educates teachers regarding the ability they hold to be able to use nonverbal actions to boost adolescents' dopamine and oxytocin levels, and inherently grow the brain and encourage an increase in learning (Hill, 2015; Ormrod, 2016). This project should foster a consideration of the multitude of elements that influence an adolescents' learning style and motivation to engage in learning. It is hoped this project emphasizes the notion that adolescents engage in implicit

making-meaning by encoding the socioemotional information they are receiving (Crittenden, & Landini, 2015). Through this emphasis, this project intends to prompt teachers to consider the positive and negative facets of the information that is conveyed and imparted onto youth during the formative period of adolescence.

**Mental health practitioners.** It is anticipated that this project would echo the message found within Hill (2015) which reminds mental health practitioners (MHP) that change amounts from *how you be, not what you do*. Despite the tension reducing behaviours adolescents may exhibit, the project reminds MHP that one must first and foremost focus on the establishment of trusting, empathetic, and attuned therapeutic alliance. The information provided within this project underscores the importance of self-care, which requires MHP to first ensure they have taken the steps required to become emotionally flexible and robust to best integrate the PRESENCE framework and support traumatized adolescents.

Moreover, this project reminds MHP of the value of maintaining a stance of curiosity, engaging in exploration of client values, and “be[ing] tolerant of ambiguity”, especially when working with adolescents who may display erratic behaviour (Collins & Arthur, 2010, p. 225). In working to endorse adolescents’ imagination and independence, this project encourages MHP to ethically consider the duty to maintain respect for the dignity of persons and peoples, maintain integrity within relationships, and to provide responsible caring (CPA, 2017). The information provided within chapter three should encourage MHP to ponder how to best engage in the maintenance of clear and concrete boundaries when facilitating growth-fostering relationships with adolescents through the PRESENCE framework. Specifically, MHP who can display warmth and empathic attunement are able to ease the process of engaging adolescents’ social-

emotional brain, and instigating the planting, nourishment, and sustainment of SEDS. Through use of the PRESENCE model, MHP will be presented with oxytocin opportunities where they can use scaffolding to guide the development of higher-order skills like metacognition when working with traumatized adolescents.

Within the counselling realm, MHP can support adolescents in processing traumatic memories that block growth-fostering relationships. This could be achieved through providing unconditional positive regard and gradually encouraging the exploration of the painful experience, while allowing ample time for emotional coordination development (Cozolino, 2014; Hill, 2015). When MHP are able to assist adolescents to verbalize their story of trauma, adolescents form new implicit and explicit memories, which allows for the formation of a new autobiographical narrative which identifies their growing resilience (Siegel, 2012). Through employing the concepts found within this project, MHP can help adolescents learn to gain the emotional coordination needed to navigate stressors in the future.

**General recommendations.** The experiential learning process detailed throughout chapter two could be used as a recommended path of professional development for future Master of Counselling students who, too, find themselves wanting to dive deeper into the world of complex trauma. In addition to the implications and recommendations mentioned above, chapter two can also provide some bibliotherapy recommendations for parents, teachers, or MHP who are interested in further enhancing their expertise in this complex area. Precisely, parents would especially benefit from participation in the *Making Sense of Resilience Course* offered by Neufeld Institute, as well as many of the other courses offered. Exploration of the Neufeld Institute is recommended to any individual who desires synchronous or asynchronous learning in

the area of resilience formulation. Finally, it is recommended that individuals who attempt to utilize any of the concepts included within this project also review the book *The Body Keeps the Score* by Bessel van der Kolk (2014). This book ensures any individual is able to garnish a well-informed idea of complex trauma through use of language that is simple, understandable, and relatable.

### **Project Strengths**

This project presents a novel synthesis of the current literature in the fields of developmental neuroscience, affective neuroscience, dyadic developmental psychotherapy (DDP), and modern attachment theory in the form of an easily accessible framework of PRESENCE. The PRESENCE framework is validated by current standards of evidence based practice, which identify the relationship as a key vehicle for sustaining change (Fosha et al., 2009). This project and the associated model of PRESENCE have the potential to assist parents, teachers, mental health practitioners, and a wide range of individuals in authentically assisting adolescents to develop the SEDS for resilience. The project in its entirety will be gifted to Tracy Cook and the staff at Connections Treatment Homes (CTH) for inclusion within staffs' scheduled monthly professional development training. It is my hope that the integration of the PRESENCE framework within CTH will yield positive impacts within the lives of adolescents. Such impacts would include an increase in adolescents' sense of self-esteem, self-regulation, and overall self-awareness. Moreover, the project and the associated PRESENCE framework have been created with the intent of inspiring a shift within Alberta Children's Services' policies and procedures to ensure ample oxytocin opportunities are offered to adolescents. Another purpose of this project was to encourage and allow post-traumatic growth for adolescents, through

equipping a wide range of individuals with the tools and knowledge to connect and facilitate adolescents' growth.

By employing the PRESENCE framework in a consistent manner, adolescents are provided with the safe environments needed to combat lasting psychological impacts of complex trauma, such as depression and generalized anxiety. In the long-term, this project may hold financial benefits for the Alberta Government, as the adoption of the PRESENCE framework could lead to an increase in the effectiveness of current adolescent resources and mitigate the need to create novel million dollar programs. The practical nature of this project, the experiential knowledge of the author, and the contribution to counselling and developmental psychology resources are also key strengths of this project.

### **Project Limitations**

Despite the project's notable strengths, there are also several limitations that are important to deliberate. A major limitation of this project is the small sample size included within the qualitative study which forms the basis of the PRESENCE framework. Due to the lack of practitioners certified as dyadic-developmental psychologists within Alberta, as well as a lack of my connections with those who may hold the certification without my knowledge, I was unable to interview more than one practitioner. The small sample size presents numerous limitations, namely: (a) I am unable to validate the generalizability of the PRESENCE framework across relationships where the gender of the cultivator is not a female; (b) I am unable to validate the applicability of the PRESENCE model across cultures; (c) confounding factors, such as the contextual relationship dynamics that exist between Tracy and the adolescents she

supports at CTH likely impacted and pre-biased my view of relationships and may have encouraged recall bias.

Although the PRESENCE framework encourages and allows for cultural sensitivity, the model does not expand to include specific tenets that may be found across cultures. The type, intensity, and duration of complex trauma an adolescent experiences is largely dictated by their culture. The PRESENCE framework may be limited in its cultural relevance, as many of its tenets may be incongruent with pre-existing cultural traditions and values. For example, the endorsement of adolescent independence may be seen as teaching disobedience by parents, family members, and even teachers and thus would likely result in heightened experiences of emotional turmoil for adolescents. The tension-reducing, impulsive, and/or moody behaviours often associated with adolescence are exhibited or entrapped in relation to the surrounding culture. In this light, the project is limited in its exploration of the role culture plays when adolescents are exposed to complex trauma.

### **Areas of Future Research**

The topic of the impact of complex trauma within adolescence is one that is of utmost importance. Adolescents are the future, which emphasizes the need for continued research in the area of reversing the impact of complex trauma to cultivate resilience during the opportune period of adolescence. At the forefront of future research for the author includes the expansion of the PRESENCE framework into a comprehensive visual guidebook which will include: (a) increased sources of empirical data and validation to substantiate the PRESENCE framework; (b) updated research-based objectives; (c) informal assessment measures to gauge the effectiveness of the PRESENCE framework within relationships; (d) curated youth-focused programs which can be used to assist

SEDS formation; and (e) specific tailored resources and strategies for parents, teachers, and MHP to plant, nourish, and sustain adolescent SEDS.

Throughout the completion of this research project, several key areas of potential research were uncovered. Of these areas, the ones of greatest benefit include an exploration of the implementation of the PRESENCE framework with adolescents across a wide range of settings. For example, studies focused on the implementation and modification of the PRESENCE framework in both teaching and recreational/ leisure settings would provide important data confirming or denying the generalizability of the framework. Further, a study examining the use of the PRESENCE framework with different age groups (e.g., children under 9 years old, adults who report experiencing complex trauma at any point) would be of great interest. Lastly, a study related to the application of the PRESENCE framework in youth juvenile settings and within the justice system could inform the creation of programs intended to engage youth and ease the planting, nourishment, and sustainment of SEDS.

### **Closing Remarks and Conclusion**

The motivation for this project began as a result of my enrolment in the Master of Counselling program, wherein I gained self-awareness and insight regarding the primary importance of human connection. Throughout the program, I learnt to articulate my fundamental worldview which informs my theoretical orientation: the ability to establish and maintain mutually empathic and empowering relationships is the key to human growth. I found extreme resonance in learning the importance of encouraging others to strive to develop enough affectionate relationships that emphasize and encourage vitalizing attunement (Schoore & Schoore, 2008). The two year multi-faceted nature of the research process informing this project left me determined that we, as humans, can



reverse the seemingly undefeatable impact of issues like developmental trauma. This formation of the conceptual framework of PRESENCE that forms the core of this project was inspired through the idea of instilling growth mindsets for resilience (Yeager & Dweck, 2012).

My goal of this project was to address the following question: In what ways can affectionate human relationships be used as a pathway to establish the growth-fostering environment to support the resilience of adolescents who have experienced complex trauma? For the purpose of this project, resilience was characterized in relation to an adolescents' ability to cultivate SEDS, despite having faced adversities. This project presented an integration of current literature and empirical data gained throughout my research process to demonstrate the applicability of the PRESENCE framework. I depicted how the PRESENCE model could be applied to assist the planting, nourishment, and sustainment of important life skills, precisely: (a) the ability to emotionally coordinate and (b) MIND oneself, and (c) the capacity to play and connect with others. This project addressed the knowledge gaps, provided insights into the complexity of complex trauma within the opportune window of adolescence, and presented the PRESENCE framework, a relationship-based medium to inspire adolescent growth. The process of composing this project initiated my first of many steps in my ultimate goal of creating an enthusiastic and supportive overall community where there is a sense of belonging and respect, and adolescents have the SEDS to build the confidence, independence, and resilience to navigate and enjoy challenge now and for years to come.

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## Appendix A

### Participant Invitation Letter and Consent Form



### PARTICIPANT (ADULT) CONSENT FORM

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#### Qualitative Exploration into the Application of Interpersonal Neurobiology

You are being invited to participate in a study entitled Qualitative Exploration into the Application of Interpersonal Neurobiology that is being conducted by Isoken (Iso) Ogumbor. Iso is a graduate student in the Faculty of Education at the University of Lethbridge and you may contact her if you have further questions by email ([iso.ogumbor@uleth.ca](mailto:iso.ogumbor@uleth.ca)) or phone (403-393-9396).

As a graduate student, I am required to conduct research as part of the requirements for a degree in Master of Counselling. It is being conducted under the supervision of Blythe Shepard. You may contact my supervisor at 403-329-2383. The purpose of this research is to identify and emphasize the salience and therapeutic value of relationships and secure attachments, and to promote relational approaches as being necessary to achieving optimal health and wellbeing. I hope to understand the process by which Dyadic Developmental Psychotherapy (DDP) influences and encourages health for clients. Through exploring DDP, I intend to gain a deeper apprehension regarding how practitioners can effectively use dyadic regulation (i.e., emotional regulation with others) to aid and support clients' psychological growth. The information collected from this study will be analyzed in order to establish a conceptual framework for health promotion. In addition, the information collected from this study will also be presented in scholarly publications and presentations (wherein no personal identification will be disclosed).

Research of this type is important in supporting the need to emphasize growth-fostering relationships within all aspects of mental health. Moreover, this research highlights the interconnected nature of individuals' health which contributes to a better understanding of mental health.

You are being asked to participate in this study because of your DDP focus when supporting children and youth who have experienced trauma and/or lack a secure attachment figure, as well as your 27 years of experience. If you agree to voluntarily participate in the research, you will partake in a one-to-one semi-structured interview at a time and location of mutual agreement. This research will require about two hours of your time. In this interview, you will be inquired about your views on the applicability of Interpersonal Neurobiology concepts within the psychotherapy realm. The interview will be audio-recorded with your permission. If you

do not wish to be audio-recorded, I will take written notes during the interviews with your permission.

There are some potential risks to you by participating in this research and they include the risk of re-experiencing tough emotions or memories as a result of discussing sensitive topics. Since I will ask you to think reflectively about your experiences in relationship to the research questions posed, potential risks associated with participation include possible psychological and emotional discomfort. Topics discussed in the interview may bring up feelings of sadness, anxiety, guilt, fear, or shame, for example. Issues or uncomfortable thoughts that had been buried might be brought to surface. Consequently, the impact of these feelings may affect social functioning. To prevent or deal with these risks, the following steps will be taken: You are free to withdraw at any time during the interview without penalty or explanation. If you become distressed at any time during the interview, we can take a break from the interview. I will turn off the laptop and check in with you, offer you a chance to do some deep breathing, get a drink of water, or withdraw from the study if desired. Furthermore, you, the participant, also have control of the laptop, and may turn it off at any time. The interview questions will be made available prior to the interview and are welcome to modification. A debrief will occur which will allow you further opportunity to discuss and process any emotions that results from participation.

The potential personal benefits of your participation in this research may include emotional and/or psychological growth through being able to talk openly about your experiences using Dyadic Developmental Psychotherapy [DDP] to foster relationships wherein you have been able to positively contribute to the growth and wellbeing of others. Benefits to society may include informing psychotherapists and other mental health practitioners so that they may provide an enhanced quality of service. In addition, I hope to employ these results to emphasize the notion that one's presence possesses healing capabilities, despite the society they reside within. Benefits to the state of knowledge include building upon knowledge pertaining to the neurobiological influence of healthy attachments. This research also has the ability to offer further empirical support regarding the effectivity of DDP. Such findings can be published in academic journals.

Your participation in this research must be completely voluntary. Please stop me at any time if you are no longer comfortable answering the questions. You may drop out of the study at any time, including during or after the interview without any consequences or any explanation. If you do withdraw from the study your data will not be used in the analysis. Specifically, upon withdrawal, the recorded data will be deleted, while the transcripts will be confidentially shredded.

Several steps will be taken to protect your anonymity and the confidentiality of the data. You will be given an opportunity to choose a pseudonym. During the audio-recorded interview, only that pseudonym will be used. I will be the only person transcribing the interviews and the only person to listen to the recorded interview. The interview, as well as an encrypted version of the transcript will be stored on password protected computer. A record of your name, contact information, and the signed consent form will be kept in a locked file cabinet or lock-box at the University of Lethbridge and viewed only by my supervisor and me. Identifying information from the interview

including the setting in which you work will not be included in the final report. However, quotations from the interview may be used sparingly. During the member-checking meeting, you will be given the opportunity to review these quotations for accuracy. The quotations will be attributed to your chosen pseudonym.

Other planned uses of this data include the presentation of the results from this study in writing in journals read by counsellors and mental health professionals, to help them better understand the importance of growth-fostering relationships and interconnected health. The results may also be presented in person to groups of counsellors or mental health professionals at conferences.

Upon completion of my study all hard copies of data will be stored in a locked filing cabinet for five years and all electronic password protected data will be deleted. Precisely, the recorded interview will be deleted after the transcripts have been created and checked. The corresponding transcripts will be destroyed after the five year period has expired.

It is anticipated that the results of this study will be shared with those counsellors and mental health practitioners who are interested in a conceptual framework for health promotion that emphasizes the salience and therapeutic value of relationships and secure attachments. Specifically, I will present at several conferences in addition to publishing an article and sharing the results with my peers through a class presentation.

In addition to being able to contact the researcher at the above phone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Office of Research Ethics at the University of Lethbridge (Phone: 403-329-2747 or Email: [research.services@uleth.ca](mailto:research.services@uleth.ca)). This research has been reviewed for ethical acceptability and granted approval by the University of Lethbridge Human Subject Research Committee.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researcher.

I agree to the audio-recording of the interview:

\_\_\_\_\_ (Printed Name)

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Date)

I have read (or have been read) the above information regarding this research study on the application of interpersonal neurobiology, and consent to participate in this study.

\_\_\_\_\_ (Printed Name)

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Date)

I agree to adhere by the protocol approved by the Office of Research Ethics at the University of Lethbridge:

\_\_\_\_\_ (**Researcher - Printed Name**)

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Date)

*A copy of this consent will be left with you, and a copy will be taken by the researcher.*

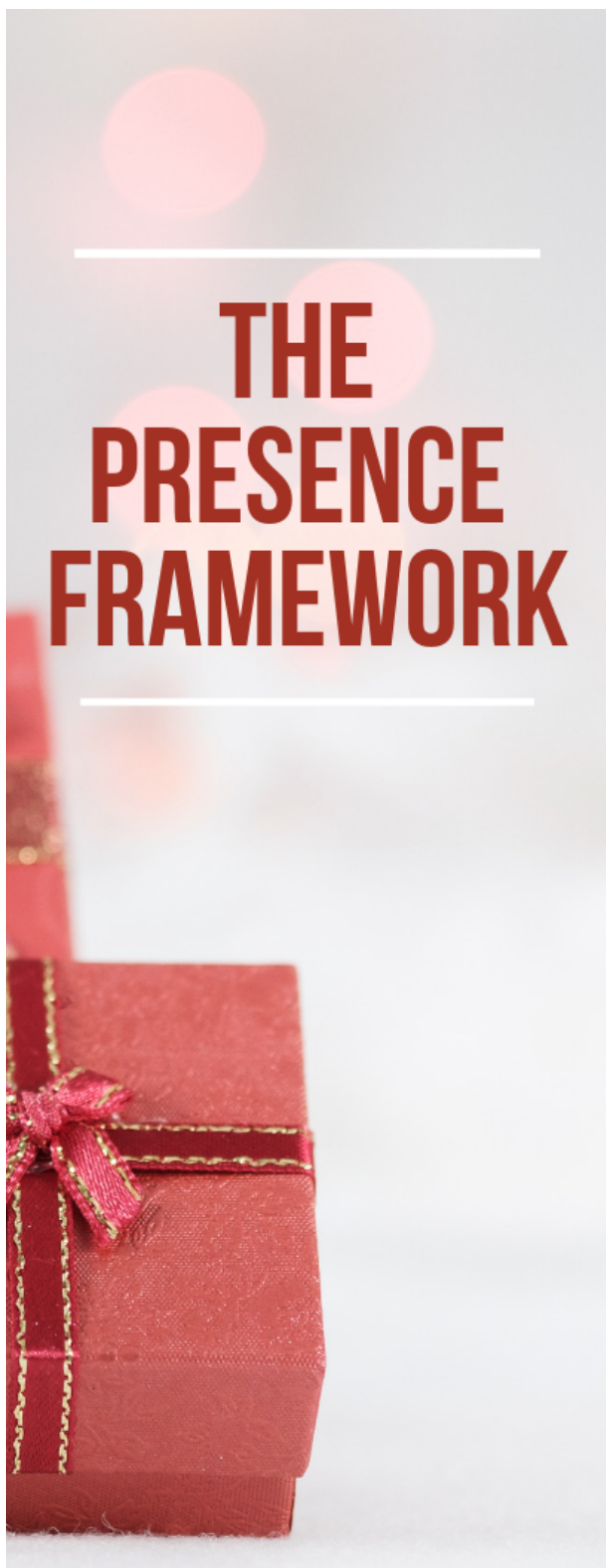
## Appendix B

### Semi-structured Interview Questions

- 1) What is Dyadic Developmental Psychotherapy? What does a typical session look like?
- 2) How does DDP work to support children who have experienced trauma and/or lack a secure attachment figure?
- 3) How does DDP enhance your capacity to sustain a caring state of mind toward your clients? (here I am assuming that the clients might be oppositional etc.)
- 4) What therapeutic outcomes are you aiming for when working with your young clients?
- 5) What does healthy social-emotional development resemble within the DDP conceptual framework?
- 6) What affective, behavioural, and cognitive characteristics do you believe constitute healthy social-emotional development?
- 7) How does the DDP therapist create environments that support the development of children's social-emotional skills/competence?
- 8) How do you create "reciprocal" and "resonating" relationships with clients?
- 9) How do the principles of PACE (playfulness, acceptance, curiosity, and empathy) assist children and youth in forming secure attachments with adults in their life?
- 10) How do the principles of PACE increase children and youth's ability to reflect upon their thoughts, feelings, and behaviour when building social-emotional competence?
- 11) What does PACE look like in practice?
- 12) What personal qualities do you bring to your DDP sessions with children/youth that make you an effective therapist?

## Appendix C

### The PRESENCE framework



# THE PRESENCE FRAMEWORK

## OBJECTIVES

- DECREASE ADOLESCENT SHAME
- FACILITATE THE OFFERING OF OXYTOCIN OPPORTUNITIES
- ASSIST ADOLESCENTS THROUGH PLANTING, NOURISHING, AND SUSTAINING THE SEEDS OF RESILIENCE (EMOTIONAL COORDINATION, THE ABILITY TO MIND ONESELF, AND THE CAPACITY TO PLAY AND CONNECT WITH OTHERS)

## PHASE 1: FEELING SAFE

CULTIVATORS OF SEEDS ARE ENCOURAGED TO

**BE:**

- POSITIVELY PLAYFUL
- RECEPTIVE AND RECIPROCAL &
- EMPATHICALLY ATTUNED

## PHASE 2: KNOWING SAFE

CULTIVATORS OF SEEDS ARE ENCOURAGED TO

**GAIN:**

- SELF-AWARENESS
- ENCOURAGE AND EXHIBIT EMPATHY &

**BE:**

- NON-JUDGEMENTAL AND NURTURING

## PHASE 3: PLAYING SAFE

CULTIVATORS OF SEEDS ARE ENCOURAGED TO

**BE:**

- CURIOUS YET COMPASSIONATE
- ENDORSERS OF INDEPENDENCE AND IMAGINATION

CAUTION: THIS FRAMEWORK IS INTENDED TO BE USED IN CONJUNCTION WITH AN AUTHENTIC RELATIONSHIP TO SUPPORT TRAUMATIZED ADOLESCENTS IN GROWING THE SEEDS FOR RESILIENCE

(OGUMBOR, 2019)