Affect Regulation and ACT as a Modality for the Treatment of Affect Dysregulation

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Abstract

Affect dysregulation is at the heart of psychopathology and a core area of dysfunction across various mental health problems and disorders. Through a literature review, this paper synthesizes existing knowledge on the development of affect regulating system, the psychopathology of affect dysregulation, and the utility of Acceptance and Commitment Therapy (ACT) as a therapeutic modality for the treatment of affect dysregulation. The research findings suggest that ACT offers a promising approach to enhance affect regulation and improve psychological well-being. Based on this research, this paper proposes best practices for the ACT modality for the treatment of affect dysregulation. Additionally, this paper also discusses challenges and limitations associated with the implementation of ACT in affect regulation interventions, and suggests future research directions, including the areas related to best practices for the implementation of the Self-as-Context intervention and the efficacy of ACT in the treatment of the primary affect-regulating system.

Keywords: affect regulation, affect dysregulation, ACT

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Affect Regulation and ACT as a Modality for the Treatment of Affect Dysregulation

Introduction

Overview of the Topic

The prevalent view of emotion, endorsed by many in the last century was that emotions were post-cognitive; were disruptive to functioning; and were to be controlled, tempered, bypassed, or avoided (Beck, 1976). Over the past decades, the technological advances in neuroscience, e.g., Functional magnetic resonance imaging (fMRI), Positron Emission Tomography (PET) scan, and Transcranial magnetic stimulation (TMS), have produced a growing body of evidence showing that emotion, not cognition, is the primary organizer of human experience (Greenberg, 2021; Hill, 2015; Schore, 2019). There is also a good deal of neuroscience evidence suggesting a more fundamental, implicit, and automatic affect regulatory process performed by the right hemisphere where the subcortical and limbic system are involved. This implicit and automatic affect regulatory process is where reason can't penetrate, so cognitive and psychoeducational methods will not work well. The evidence from the studies in affective neuroscience (Lane & Nadel, 2000; Schore, 1999) has highlighted dysregulated affect at the heart of psychopathology, privileging the role of emotion over thought during corrective regulation, and the role of implicit, embodied processes over explicit, verbal ones within psychotherapy.

In the psychotherapy field, emotion regulation is at the heart of Gestalt therapy (Polster, 1974). In Dialectical Behaviour Therapy (DBT), personality disorder is, at its core, a disorder of emotion dysregulation, and DBT's biosocial theory is the causal model of

emotion dysregulation (Linehan, 2014). The creator of Emotion-Focused Therapy (EFT), Leslie Greenberg (2021), also argues disordered affect regulation is a core area of dysfunction underlying various mental health problems and disorders and suggests a view that puts emotional change as a fundamental aspect of therapeutic change and offers it as a transdiagnostic, transtheoretical alternative to the ever-increasing proliferation of disease-specific therapeutic systems.

In this context, I think it is important to exam current research on theories of affect regulation through the lens of attachment theory, developmental trauma, and neurobiology of emotional development. With the deep understanding of the science of how humans develop the capability of regulating emotions and the developmental origins of affect dysregulation, we can explore how these findings can be applied in the field of psychotherapy to improve efficacy.

Purpose Statements

The purposes of this paper are to define and outline the nature of affect regulation and the psychopathology of affect dysregulation, to discuss ACT as a therapeutic modality for the treatment of affect dysregulation, and to integrate value-based living into the treatment of affect dysregulation. Finally, the paper is going to propose best practices for the ACT modality for the treatment of affect dysregulation.

The target audience of this research is practitioners, academics, and students in the field of psychotherapy.

Contribution to the Field

Affect regulation has unique meaning to my future career as a therapist, as I think that affect regulation needs to be regarded as a fundamental aspect of therapeutic change and be offered as a transdiagnostic alternative to the "specific treatments for specific symptoms" therapeutic systems. At least, the psychotherapy field needs to add "affect" to the current cognitive behavioural perspective that has dominated for the past decades, to achieve a holistic therapy approach based on foundational principles of emotional, cognitive, and behavioural change.

The technological advances in neuroscience, e.g., fMRI, PET scan, ERP and TMS, over the past decades also enabled the studies on affect theory and affect regulation at a neurobiological level, which used to be more difficult for observation and measurement compared with the study of cognition and behaviours. Those advances made this literature review more feasible and able to come up with conclusions that are practical for clinical application.

The study of affect regulation and the psychopathology of affect dysregulation helps us better understand the underlying mechanisms of various mental health problems. Many psychological disorders, such as anxiety, depression, post-traumatic stress disorder, and borderline personality disorder, are characterized by difficulties in regulating affect. Studying affect regulation and the psychopathology of dysregulation can shed light on the core features and causes of these disorders. Understanding how affect regulation difficulties contribute to psychopathology allows for the development of more effective interventions and treatment strategies.

The research also can contribute to the development of prevention and early intervention programs. By identifying risk factors associated with affect dysregulation and psychopathology, researchers can inform preventive efforts and early intervention programs. This is particularly valuable in addressing mental health challenges before they escalate into more severe conditions. In addition to this, affect regulation is not limited to clinical populations. Instead affect regulation has public health implications and plays a role in everyone's everyday emotional well-being. Research in this area can inform public health initiatives aimed at promoting emotional resilience and well-being in the general population. For example, in addition to contributing to the development of the affect dysregulation treatment for clinical populations, therapists and social workers can also offer parenting workshops or training programs to help parents understand the importance of affect co-regulation and how to cultivate their children's capacity for affect regulation during their critical development periods.

ACT offers a unique perspective on addressing affect dysregulation by emphasizing defusion, acceptance, mindfulness, and values-based actions. The research on ACT as a modality for the treatment of affect dysregulation can help us understand how ACT differs from other therapeutic approaches (e.g., CBT, DBT) in terms of the treatment of affect dysregulation and when it may be a preferred choice. The research can also drive innovation in ACT interventions, leading to the development of more targeted and effective treatments for specific types of affect dysregulation (primary or secondary regulating system) or populations with unique needs. By investigating which components of ACT are most effective for specific affect dysregulation patterns, research can inform the tailoring of

treatment plans to meet individual needs.

In summary, research on affect regulation and ACT as a modality for the treatment of affect dysregulation has wide-ranging implications for our understanding of mental health and emotional well-being. It can lead to improved diagnosis, treatment, and prevention strategies for mental health problems while also promoting a more compassionate and holistic approach to mental health for the whole society.

Reflectivity and Positionality Statement

A potential bias in the research of this Capstone project could be caused by my belief that affect, not cognition, is the great captain in our lives and affect dysregulation is a common malfunctional area underlying lots of mental health problems. Although numerous studies today such as Barrett's emotion theory (2017) have showed that emotion plays a primary role over cognition, the science today still can not give a clear picture how emotions are made and how affect and cognition impact each other. There are still academic views supporting CBT's theory that thoughts produce emotions and cognition plays a primary role over emotion.

Another potential bias of mine may stem from my social status as a middle-class woman, which may mean that I do not pay enough attention to systemic barriers that play a key role in the mental health challenges of marginalized people or people with low socioeconomic status (SES). This bias may make the research of this Capstone project overemphasize the importance of the treatment of affect dysregulation and development of emotional resilience for marginalized people or people with low SES to cope with the adversities in life, while ignoring social factors and underestimate the value of advocating for

addressing systemic barriers in society in order to reduce the life adversities and mental health problems those people confront.

The above potential biases may impact my data collection and processing process. I may unconsciously collect journals or books that are in line with my views and discard those with opposing views. My bias may also manifest itself on the selection of the keywords for data searches. What I can do to minimize my bias is to be aware of this throughout the research process, and intentionally take actions to maximize the objectivity including reviewing journals or books with opposing views and searching for criticisms of my preferred theories to understand the research topic from different perspectives.

Theoretical/Conceptual Frameworks and Definition of Terms

The study of the development of affect regulation and the psychopathology of affect dysregulation is a complicated research area that involves multiple dimensions. Several theoretical frameworks and perspectives were used in this Capstone project to guide research in this area.

ACT theory of Psychopathology: The uniqueness of the psychopathology theory of ACT is that it assumes psychological processes of a normal human mind are often destructive and psychopathology is the norm and differs by only degree (Hayes, 2005). From the psychopathology theory of ACT, this paper reviews how this modality offers a unique approach on addressing affect dysregulation by emphasizing defusion, acceptance and values-based actions.

Attachment Theory: Developed by John Bowlby and Mary Ainsworth, attachment theory emphasizes the importance of early attachment relationships in emotional

development. This study explored how early attachment experiences influence an individual's ability to regulate emotions and how traumas in attachment can contribute to affect dysregulation and psychopathology during the critical period in the development of the primary affect regulating system.

Developmental Psychology: This framework focuses on understanding the development of affect regulating systems and development of the psychopathology of affect dysregulation, within a developmental context. It considers how various factors (biological, psychological, social) interact over time to shape emotional development and regulation or contribute to the emergence of affect dysregulation.

Emotion Regulation Models: Specific models of emotion regulation, such as the most widely used one - Gross's (1999) Process Model of Emotion Regulation, provide a comprehensive framework for understanding how individuals regulate their affects via different strategies. This Capstone project used these models to examine how those core interventions in the ACT modality achieve affect regulation from the perspective of the emotion regulation models.

Neurobiological Framework: Understanding the neural mechanisms underlying affect regulation and dysregulation is a crucial aspect of research in this area. In the last two decades, scholars such as Allan Schore (1994) and Daniel Hill (2015) extended Bowlby's classical attachment theory from the behavioural and psychological spheres to the interpersonal neurobiological sphere. Schore's affect-regulation theory (2003) explores how

early relational trauma impacts the optimal development of the limbic system and the circuits connecting it to the ANS and alters the functioning of the HPA axis.

This paper drew from multiple theoretical frameworks to gain a comprehensive understanding of the development of affect regulation and affect dysregulation psychopathology. Interdisciplinary approaches that integrate concepts from neuroscience, psychology and sociology can provide a richer perspective on this complicated area of research.

The term “affect” in affect regulation refers to the feeling tone a person is experiencing at any given point in time. Feeling tones vary in terms of energy level. If the feeling is strong, has a clear cause, and is the focus of conscious awareness, we usually use the term “emotion” to refer to those feelings. If the feeling is mild, does not have a clear cause, and is in the background of awareness, we usually use the term “mood” to refer to those feelings. Although some scholars have used the term “emotion regulation” (Davidson, 2000; Gross & John, 2002) and other scholars have used the term “mood regulation” (Parkinson et al., 1996), this paper prefers to use the term “affect” because it is more general and includes all kinds of feeling states.

For the term “regulation” in affect regulation, there are many proposed definitions in the literature. The definition often varies based on the purpose of research (e.g., efficacy of specific affect regulation strategies) and there is no one standard version. However, most versions include the concepts that in monitoring and appraising the affect states, individuals take action either to maintain or to change the intensity of affect, or to shorten or prolong the

duration of affect (Gross, 1999; Parkinson et al., 1996). One definition of affect regulation developed specifically for clinical use and treatment development is the definition by the scholars Gratz and Roemer (2004):

> Adaptive ways of responding to emotional distress, including the awareness, understanding, and acceptance of emotions, ability to control impulsive behaviors and engage in goal-directed behaviors when experiencing negative emotions, flexible use of situationally appropriate strategies to modulate the intensity and duration of emotional responses in order to meet individual goals and situational demands, and a willingness to experience negative emotions in pursuit of desired goals. (p. 2)

This paper will use this definition in the following discussion of affect-regulation development and ACT as a therapeutic modality for the treatment of affect dysregulation as the clinical context of this definition fits the research purposes of this Capstone project.

In the reviews of the development of affect regulating systems and psychopathology of affect dysregulation in Chapter 2, the two different types of affect regulation systems involved in the affect regulation process will be discussed. This paper is going to briefly introduce the definitions of the two affect regulating systems here as well. Most contemporary theories of affect regulation propose that we have two affect-regulating systems: a primary affect-regulating system and a secondary affect-regulating system (Greenberg, 2021; Hill, 2015; Schore 1994). The primary affect-regulating system includes the implicit affect-regulation processes performed by the right brain. It is automatic, fast, and functions unconsciously. Mapping to Freud's psychoanalysis theory, the "implicit process"

refers mainly to the unconscious part of the mind diagram; mapping to the field of affective neuroscience, the implicit affect regulation process refers mainly to the limbic system, the domain of amygdala-based emotion (Schore, 1999). The secondary affect-regulating system utilizes reflective functioning to reappraise and change the intensity or duration of affect after it is fed by the primary system. It is explicit, slow, and functions verbally and consciously.

Outline of the Capstone Project Chapters

The final part of the introduction is going to provide an overview of the rest of the chapters of this Capstone paper. In Chapter 2, the literature review starts with how the affect-regulating system is developed via attachment, in which the development of two types of affect-regulating systems (primary affect-regulating system and secondary affect-regulating system) are discussed separately. Then the review focuses on developmental origins of affect dysregulation, and how early relational trauma impacts the development of the affect regulating system at the neurobiological level. Finally, the literature review links the theoretical research to clinical applications by exploring the working mechanisms and efficacy of the core interventions (defusion, acceptance, value-based living) of ACT for the treatment of affect dysregulation.

In Chapter 3, the paper provides a summary of best practices in using ACT as a modality for the treatment of affect dysregulation based on the literature review of working mechanisms of ACT for the treatment of affect dysregulation in Chapter 2. The best practices include suggestions on the timing and the way of engaging the core interventions of ACT and the pitfalls we need to be careful of in the therapy process. Finally, Chapter 3 ends with the

two questions which I think are worth follow-up in my future career as they are important, but no definitive answer has been found during this Capstone project research.

Literature Review

Development of the Affect-Regulating System

Attachment Theory

Attachment theory was first proposed by John Bowlby, a British psychiatrist, in the 1950s and is a psychological framework that explores how early childhood experiences with caregivers shape an individual's internal working model of relationships. The latter are ways of being in relationships, which in turn influences the way people form emotional bonds with others throughout their lives (Bowlby, 1969). Bowlby's student Mary Ainsworth and her student Mary Main expanded Bowlby's theory by proposing four attachment styles that can develop between infants and their attachment figures (Ainsworth et al., 1978; Main & Solomon,1990). Together, their work provides a foundation for understanding how the capacity of affect regulation develops in the context of attachment relationships when children mainly depend on their attachment figures for affect regulation. These four styles include:

Secure attachment: Infants with secure attachment styles feel confident that their caregivers will be available and responsive when they need them. They move toward attachment figures when distressed and are comfortable seeking support. There are good at regulating affect with flexible means of utilizing either dyadic or autoregulation (Hill, 2015).

Insecure-Avoidant attachment: Infants with an avoidant attachment style have learned that their caregiver is consistently unavailable or unresponsive. They may avoid seeking out their caregiver when distressed. They have prolonged states of dysregulated affect (hypo-arousal) and the main means of regulating affect is autoregulation (Hill, 2015).

Insecure-Ambivalent attachment: Infants with ambivalent attachment styles are uncertain about their caregiver's availability and responsiveness. They may be clingy and anxious when their caregiver is present. They have prolonged states of dysregulated affect (hyper-arousal) and the means of regulating affect is mainly dyadic regulation (Hill, 2015).

Disorganized attachment: Infants with disorganized attachment styles show contradictory behaviors when in the presence of their caregiver. They may be fearful of their caregiver, act aggressively towards them, or display other odd behaviors. The above two insecure attachments at least manage to develop a coping strategy, although maladaptive, while disorganized attachment shows a chaotic pattern of dysregulated affect (hyper- and hypo- arousal) and fail to develop a coping strategy for affect regulation (Hill, 2015).

Development of the Primary Affect-Regulating System

In the last two decades, the scholars such as Alan Schore (1994) and Daniel Hill (2015) extended Bowlby's classical attachment theory from the behavioural and psychological spheres to the interpersonal neurobiological sphere. Schore's affect-regulation theory (2003) proposes that the development of the brain and the regulation of affect are closely related. The brain is shaped by the early experiences of attachment relationships, which affect the development of the affect regulating system. Caregivers who are consistently available and responsive to their infant's emotional needs help the development of their affect regulating systems. Through affect co-regulation with their caregivers in the attachment relationship, individuals internalize these regulatory experiences and learn how to regulate their affect themselves in later life.

Schore's theory (1994) proposes a critical period in the development of the primary affect-regulating system: a neurological growth spurt that begins prenatally and continues until the age of 16-18 months. The limbic structures develop during this period and are organized hierarchically with the cortical structures that develop later and serve to regulate the limbic structures. During the same period, circuits in the brain develop to connect the limbic system first to the sympathetic branch and then to the parasympathetic branch of Autonomic Nervous System (ANS). By the end of this period, the infant develops a functioning limbic system linked to the Hypothalamic-Pituitary-Adrenal (HPA) axis and the ANS, a system regulating arousal. How it develops is impacted by the infant's experiences of affect regulation in their primary attachment relationship(s).

The followings are two examples of how the infant-mother dyad impacts the development of the capacity to regulate sympathetic and parasympathetic arousal (Hill, 2015; Schore, 1994):

An example of downregulation is when an infant is feeling distressed and crying, and in response the mother begins to soothe the infant. As the mother soothes the infant, the infant's parasympathetic nervous system is activated, leading to a decrease in physiological arousal. The infant may begin to feel relaxed and stop crying. Through repeated interactions like this, the infant learns that when they feel distressed or overwhelmed, their mother is there to provide comfort and help them regulate their emotions. Over time, the infant internalizes this experience and develops the capacity for self-regulation (down-regulating).

An example of upregulation is a scenario where a mother and her infant are engaged in play together. The mother is smiling, making playful noises, and encouraging the infant to interact with her. As the infant engages with the mother, they may become excited and show signs of joy and enthusiasm. Through repeated interactions like this, infants learn that they can express positive emotions and their mother responds positively to their expressions of excitement. Over time, the infant internalizes this experience and develops a sense of emotional self-efficacy and the capacity for self-regulation (up-regulate).

Schore (2003) proposes that these secure attachment experiences facilitate the optimal development of the limbic structures and a balanced ANS. Also, the interactive affect regulating experiences becomes the internalized procedures for upregulation and downregulation. During this critical period, the limbic system is organized into a cortical-subcortical hierarchy, with the right orbitofrontal cortex at the apex performing a final analysis of emotional information. From the psychobiology perspective of affect-regulation development, " implicit memories of rupture-repair sequences of dysregulation and reregulation are stored in the ventral and lateral tegmental limbic circuits and are internalized as operating instructions for sympathetic and parasympathetic regulation" (Hill, 2015, p. 92). During this period, when the capacity to upregulate is developed, the ventral tegmental limbic circuits connect the right orbitofrontal cortex to the HPA axis and the sympathetic nervous system. In this process of upregulating, the HPA axis produces adrenaline and noradrenaline to the energy-expanding, upregulating sympathetic nervous system. When the capacity to downregulate is developed, the lateral tegmental limbic circuits connect the right orbitofrontal cortex to the HPA axis and parasympathetic nervous system. In this process of

downregulating, the HPA axis produces cortisol, endorphins and endogenous opiates to the inhibiting, energy-conserving, downregulating parasympathetic nervous system (Hill, 2015). Now the infant is on the path to building self-regulation of affect, even when under stress.

Development of the Secondary Affect-Regulating system

The secondary affect-regulating system, also known as mentalization (Allen & Fonagy, 2006; Fonagy et al., 2002), is a left-brain, cortically based, conscious, slow affect-regulation system that develops later than the primary system. Main (1991) called this "metacognitive monitoring", which was a sign of secure attachment. The weakness of this system among parents often predicts insecure or disorganized attachment styles in their children (Main, 1995). Fonagy et al. describes the ability to mentalize as "the process by which we realize that having a mind mediates our experience of the world" – the knowledge of minds in general and "the activity of thinking explicitly about states of mind" (Fonagy, Gergeley, Jurist, & Target, 2002, p. 3). The research done by Fonagy and his colleagues showed that parents with strong mentalization were 3-4 times more likely to have children with a secure attachment style than parents with a weak capacity for mentalizing, and parents with strong capacity for mentalizing could break the cycle that usually led them to raise children with an insecure attachment style due to intergenerational trauma (Fonagy et al., 1991).

There are four modes of mentalizing that develop sequentially (Hill, 2015). The first three to develop –Teleological mode (distinction between intent and action), Psychic equivalence mode (the mind is representational in nature and mental representation is distinct from the thing represented), and Pretend modes (mental representation is experienced as

separate from the thing represented but too detached from their referents in the real world) – are considered pre-mentalizing processes. The fourth mode Full mentalization integrates Psychic equivalence and Pretend modes – mental representations neither too attached nor too detached from their referents in the real world. Representations look real and meaningful while on the other hand can also be questioned and corrected. They are perceived as our subjective understanding of reality rather than reality itself (Hill, 2015).

The secondary affect-regulating system started to develop sometime in the sixth year of life and continues throughout childhood and adolescence, and the development of the primary system will impact the development of the secondary system (Fonagy & Target, 1997). The two affect-regulating systems work together where primary affect is processed in the primary regulating system first and then further processed in the secondary regulating system. Through these two systems, somatic experiences become words in the mind and preconscious implicit processing of the right brain is followed by the conscious explicit processing of the left brain.

As the secondary affect regulating system's regulation depends on the primary system's affect regulation, the psychopathologies of affect dysregulation in clinical settings can be a failure to develop the primary affect regulating system (dysregulated-dissociated affect not available for mentalizing), or a failure to develop the secondary affect regulating system in the first place, or both. This paper will discuss in detail in the next section on the developmental origins of affect dysregulation.

Psychopathology of Affect Dysregulation

Developmental Origins of Affect Dysregulation

Relational trauma has only recently begun to be studied empirically (Bureau et al, 2010; Courtois, 2014; Ford, 2009; Liotti, 2004) and may be defined as "exposure to chronic misattunement and prolonged states of dysregulation in the context of the early attachment relationship" (Hill, 2015, p 50). When seeking affect regulation from the caregiver, the infant receives responses that exacerbate rather than modulate the dysregulation. The caregiver has no emotional capacity to regulate the infant sufficiently or even becomes the source of the stressor requiring regulation. In Schore's (1994) work, he proposes that early relational trauma results in psychoneurobehavioral defects in the primary affect-regulating system. Prolonged states of dysregulation generate neurotoxic conditions that adversely alter the developing limbic-ANS structures. Chronic episodes of misattuned regulation also leave an imprint of maladaptive neurobiological, behavioral, and psychological procedures to stress.

In the insecure-ambivalent attachment style, the infant's autoregulation is underdeveloped and hyperaroused defenses against stress become dominant. In the insecure-avoidant attachment style, the infant's attachment needs are dismissed or even shamed, and autoregulation is the dominant coping strategy. At the neurological level, avoidant trauma results in a parasympathetic bias and incapacity to regulate hyper-aroused affect states and hypo-aroused defenses against stress become dominant. In disorganized trauma, the damage to the primary affect-regulating system is qualitatively more severe than that in insecure attachment. At the neurological level, in a secure attachment, the relationship between the activations of sympathetic and parasympathetic nervous systems of the ANS are

counterbalancing and reciprocal. In cases of structured insecure attachment, these two components of the ANS become biased but remain coupled. Although unbalanced, there is still a moderating effect, and a coping strategy is developed. In disorganized attachment, the neurochemical damage is so severe that the two aspects of the ANS become uncoupled. Lacking the reciprocal counterbalance, the sympathetic and parasympathetic aspects may be activated simultaneously but they do not serve as a moderating counterforce for one another (Schore, 2006).

Relational Trauma as a Neurodevelopmental Disorder

Chronic stress that is caused by relational trauma, produces neurotoxic conditions during the critical period in the development of the primary affect regulating system. Schore's work (1994) provides extensive evidence that early relational trauma impacts the optimal development of the limbic system and the circuits connecting it to the ANS and alters the functioning of the HPA axis. His theory proposes epigenetic influences involving the experience-dependent expression of genes: "Under conditions of chronic stress, there is insufficient environmental inducement of metabolic conditions that support the genetic expression of proteins necessary for the development of limbic structure." (Schore, 1994, p 101).

In Dialectical Behaviour Therapy's (DBT) biosocial theory about how emotion dysregulation develops, Linehan (2012) also proposed that biological vulnerabilities (e.g., emotional sensitivity) and the invalidating environment (e.g., relational trauma) are two contributing factors during the critical development period of childhood, and eventually lead

to pervasive emotion dysregulation and repetitive maladaptive behaviors that serve an emotion regulation function and become reinforced.

ACT for the Treatment of Affect Dysregulation

Acceptance and Commitment Therapy (ACT) is a form of psychotherapy that falls under the category of third-wave behaviour therapies (Prochaska & Norcross, 2018). It was developed in the 1980s by Steven C. Hayes and his colleagues (Hayes, 2005). ACT combines elements of cognitive-behavioural therapy (CBT) with mindfulness and acceptance strategies. The goal of ACT is to help clients develop psychological flexibility by accepting their uncomfortable thoughts and feelings without judgment while committing to actions that are in line with their values. It includes six core processes: Acceptance, Defusion, Being present, Self-as-context, Values, and Committed Action.

ACT therapists use a range of techniques and exercises to help clients develop psychological flexibility and implement these processes in their lives. These include mindfulness exercises, metaphors, experiential exercises, values clarification, behavioral activation, etc. One comprehensive meta-analysis examining the efficacy of ACT for various mental health issues was conducted by A-Tjak et al. (2015). The study included 39 randomized controlled trials involving 1,821 participants. The results indicated that ACT was significantly more effective than control conditions with a moderate overall effect size. ACT showed promise as a treatment option for a variety of psychological difficulties (A-Tjak et al., 2015). In the following sections, this paper will review the roles of three core ACT processes (Defusion, Acceptance, Values) in the treatment of affect dysregulation which is a common dysfunction underlying many mental health challenges.

Defusion

Defusion is a key process in ACT (Prochaska & Norcross, 2018). It involves helping clients create distance between themselves and their thoughts, allowing them to observe and relate to their thoughts more flexibly. Defusion paves the way for other core ACT processes such as Acceptance and Self-as-Context. It is also the prerequisite for the development of the secondary affect regulating system or mentalizing. Studies have shown that defusion as an intervention in the clinical domain was effective in regulating negative affect for participants with major depressive disorders, bipolar, and trauma (Ayduk and Kross, 2010; Kross and Ayduk, 2017).

In defusion, individuals learn to recognize that thoughts are just mental events that come and go, and thoughts are not necessarily accurate reflections of reality or instructions for action. ACT therapists use various techniques to help individuals develop cognitive defusion skills. Here are the key techniques:

Labeling Thoughts: Individuals are encouraged to label their thoughts as "just thoughts" or "stories" rather than facts or truths. This labeling helps to create a sense of detachment from the content of the thoughts. The study showed that affect labelling itself - putting feelings into words, is a form of implicit emotion regulation which can attenuate our emotional experiences (Torre & Lieberman, 2018).

Noticing Thoughts: By developing mindfulness skills, individuals learn to observe their thoughts without judgment or attachment. They can notice thoughts as mental events occurring in their awareness. Therapists may use metaphors to illustrate the idea that thoughts

are just passing events in the mind. For instance, they may compare thoughts to clouds passing by or leaves floating down a stream (Hayes, 2005).

Singing or Repeating Thoughts: Individuals may be asked to repeat or sing their distressing thoughts repeatedly to reduce their impact and show how language and cognitive processes impact their thoughts (Hayes, 2005).

From the affect regulation perspective, defusion's function is to change the status of regulated emotions instead of changing their length or intensity directly. With increased distance from uncomfortable thoughts and emotions, defusion decreases the believability of private experiences, therefore decreasing reliance on and cling to one's own emotions (Hayes et al., 2005). Defusion shifts the relationship with thoughts from the thinking process itself to observing the thinking process, namely “meta-thinking” or mentalizing. Therefore, defusion can be regarded as an intervention that can help clients develop or improve the capacity of the secondary affect regulation system. However, it is worth pointing out that the process of defusion also addresses the capacity of the primary affect regulation system. For example, the key technique of the defusion process - labeling by putting bodily sensations and preconscious implicit feelings into conscious explicit words or pictures, also improves the capacity of the primary affect regulation system and the collaboration between the primary and secondary affect regulation system.

One of the most widely used affect regulation models is Gross' Process Model of Emotion Regulation (Gross, 1999), which has been widely used in research and clinical settings to understand how individuals regulate their emotions and cope with various

emotional experiences. Gross's emotion regulation model provides a comprehensive framework for studying and classifying different emotion regulation strategies and their effects. From this model's perspective, defusion is under the third family of emotion regulation process – attention deployment. By shifting the attention from ruminating thoughts to "meta-thinking", we shifted the attention from the mental events to the attention itself – the consciousness. However, defusion as an emotion regulation strategy, seems to be different from other traditional strategies under the family of attention deployment. Traditional strategies under this family refer to shifting attention from mental event A to mental event B, such as distracting, while defusion represents a shifting of consciousness state from focused consciousness to meditative consciousness. In the traditional strategies of attention deployment such as distracting, mental event A is out of individuals' consciousness when the attention is shifted to mental event B successfully. In this "focused consciousness" state, the focused nature of attention allows consciousness to produce a clear and deep understanding of the reflected object. In defusion, when the attention is on consciousness itself, individuals are still aware of mental event A but can not pinpoint it. In this "meditative consciousness" state, the lack of focused attention makes consciousness only aware of the existence of mental event A but unable to produce a clear and deep understanding of it. This uniqueness of defusion and its difference from traditional strategies of attention deployment has rarely been discussed in academic articles. This may be attributed to the fact that this widely used model of emotion regulation was raised in 1995, however, research in psychology is constantly evolving, and through the rapid development of emotion theory and

contemplative science new models or revisions to existing emotion regulation models will emerge.

Acceptance

In ACT, acceptance refers to the process of willingly and non-judgmentally embracing one's thoughts, emotions, and physical sensations, as well as the experiences of the present moment. It involves allowing these experiences to occur without attempting to change, avoid, or suppress them.

Acceptance in ACT is not about liking or approving of one's experiences but rather acknowledging and making room for them. It is based on the understanding that resistance against or trying to control unwanted thoughts and emotions often leads to increased suffering and can get in the way and prevent individuals from engaging in meaningful actions.

Here are some key aspects of acceptance in ACT:

Acceptance: Radical acceptance means fully and completely accepting the present moment, including all its difficulties and challenges, without judgment or resistance. It is about embracing reality as it is now, rather than how one wants it to be.

Acceptance vs Resignation: Acceptance is not the same as resignation or giving up. It is an active process of acknowledging and making room for experiences while still taking steps toward creating a rich and meaningful life.

Observing and Allowing: Acceptance involves observing and allowing thoughts, emotions, and bodily sensations to arise and pass without getting caught up in them. It means

creating a space in awareness where experiences can come and go without being fused or identified with them.

Psychological Flexibility: Acceptance is a core component of developing psychological flexibility, which is the ability to be present in the moment and consciously choose actions that align with one's values. Acceptance allows individuals to open up to their experiences, even if they are uncomfortable, and move forward in life.

Willingness: Acceptance is paired with willingness, which means being open and curious to experiencing whatever comes up, even if it is uncomfortable or unwanted. Willingness involves going beyond dualism and embracing the full range of human experiences, both positive and negative.

ACT therapists may use mindfulness exercises, meditation practices, and experiential exercises to help individuals notice their previous coping mechanism (resistance, avoidance, suppression, etc.) and cultivate acceptance. By accepting their thoughts, emotions, and sensations, individuals can free up energy that was previously consumed by struggling against them. This allows them to redirect their focus and engage in actions that are consistent with their values, leading to greater psychological well-being and vitality. Together with defusion interventions, acceptance allows individuals to see their emotions as transient events rather than absolute truths, reducing the impact and control these thoughts may have over their emotional experiences.

The challenge in reviewing the literature on the efficacy of acceptance interventions in affect regulation is the lack of coherence in operationalizations of acceptance in various

research (e.g., in some studies, acceptance includes acceptance and being present, in some studies, acceptance includes defusion and acceptance, etc.). Perhaps because of this, acceptance is not recognized as a distinct emotion regulation strategy in Gross' emotion regulation model (Gross, 1999). Some scholars classify acceptance within the family of attention deployment strategies while others view it as a strategy within the family of cognitive change strategies in Gross' emotion regulation model.

If we follow the definition of acceptance in ACT as one of the six core processes, which is independent of the process of defusion and being present, then this paper views acceptance as a strategy within the family of cognitive change strategies – reappraisal. Acceptance is the process of willingly and non-judgmentally accepting one's thoughts and emotions of the present moment as they are, which requires insights into why avoidance and suppression that works in problem-solving situations with the external world often backfire in dealing with our inner suffering, and why we need to go beyond dualism to embrace the full range of human emotions, both positive and negative (Hayes, 2005). The process of developing those insights produces cognitive reappraisal in how we relate to the pains in our life. Those insights are the soil that nurtures the seeds of willfulness and non-judgment, which ultimately help us to transcend our pains and leads to transformative emotions such as self-compassion.

Gross' emotion regulation model can also explain why acceptance works better than experiential avoidance and suppression because acceptance as a cognitive change intervention belongs to antecedent-focused strategies that change the emotion trajectory very early on while avoidance and suppression belong to response-focused strategies that occur

after response tendencies have already been generated (Gross, 2002). This difference in timing predicts very different results in terms of regulation efficacy. Acceptance as reappraisal occurs in the early stages of the emotion-generation process, and decrease physiological, behavioural, and experiential responses by cognitively neutralizing a potentially emotion-arousal situation. In contrast, suppression takes place later in the process and requires active self-monitoring and self-correction throughout the course of the emotional event. This monitoring and inhibition of emotion requires a continuous investment of psychological resources, which is very energy-draining. Interestingly, this is also in line with the traditional view of psychoanalysis. From the psychoanalysis perspective, suppression (consciously blocking) and repression (unconsciously blocking) are regarded as the most energy-consuming defense mechanisms (Freud, 1936). Thus, suppression, as a response-focused strategy, should not alter emotional experience at all, but rather increase physiological activation (e.g., increased heart rate, constriction of blood vessels) as a consequence of the effort increased in inhibiting ongoing emotion-expressive behaviour. Gross and his colleagues' study data also confirmed this view (Gross, 2002).

As a cognitive change strategy, acceptance as an intervention can help clients to develop the capacity of the secondary affect regulation system if we try to fit this intervention into the framework of the two affect regulation systems. However, as discussed earlier, whether defusion and acceptance work together as interventions to shift the consciousness state from focused consciousness to a different state - meditative consciousness, what is the link between meditative consciousness and the right brain's primary affect regulation system, and what role the exercises of meditative consciousness state play in developing the capacity

of the primary affect regulation system, contemporary literature cannot provide an answer. This paper suggests that this could be one of the areas for further research in the domain of affect regulation.

Value-based Living

In ACT, defusion and acceptance is not an end but, is a process goal rather than an outcome goal (Hayes, 2005). The goal of defusion and acceptance is to release energy from struggles with negative emotions and cognitions to the pursuit of a value-based life. In ACT, values refer to the desired qualities, directions, and aspects of life that individuals find meaningful and important. Values represent what individuals care about deeply and what they want to guide their actions and choices (Hayes, 2012). The key aspects of value-based living in ACT include:

Chosen Directions: Values are not specific goals or outcomes to be achieved but rather broad directions or qualities of behaviour that individuals strive to embody in their lives. They represent how individuals want to behave and the kind of person they want to be.

Consistent with Authentic Self: Values are aligned with an individual's authentic self and reflect their deepest sense of purpose and meaning. When individuals live in accordance with their values, they often experience a sense of fulfillment, congruence, and well-being.

Contextual: Values are subjective and context-dependent. They can vary across different areas of life, such as relationships, work, health, or personal growth. Values may differ from person to person based on their individual priorities and life circumstances.

Intrinsic and Enduring: Values are considered intrinsic to the individual, meaning they reflect their own personal desires, aspirations, and beliefs. Values are not imposed by external sources but are chosen by the individual based on their unique perspective and life experiences. Values tend to be enduring and relatively stable over time.

Identifying and clarifying values is a central component of ACT. Therapists help individuals explore their values across ten domains through exercises and discussions, allowing them to gain clarity about what truly matters to them. However, values are not just abstract concepts on paper. ACT emphasizes the importance of actively engaging in behaviors that align with one's values. In ACT, value-based living includes not only identifying and clarifying values, but also committing to behaving in accordance with them. The latter includes breaking down values into long-term goals and short-term goals, and then breaking down the goals into actions and subactions, and planning the corresponding ACT strategies based on expected barriers in this journey (Hayes, 2005).

The role of value-based living in the treatment of affect dysregulation can be summarized in the following two areas:

Firstly, the studies showed that cognitive appraisal mediates the impact of core values on affect regulation. Values and affect can similarly be regarded as psychological markers of subjective relevance (Conte, Hahnel & Brosch, 2022). While values define, at a conceptual level, the guiding principles that a person generally recognizes in life, affect works at a more situational level by activating the organism to respond to what touches on a person's goals and values in a given situation. A study (Conte, Hahnel & Brosch, 2022)) showed that

individuals core values will predict the intensity of their emotional responses when they encounter value-related stimuli and that this effect is mediated by cognitive appraisals of relevance. From this perspective, values-based living as an intervention in ACT can positively influence affective regulation through cognitive reappraisal by directing the person to focus on what is intrinsic to their authentic self and meaningful self-expression, and to develop or reconstruct life goals that aim to embody personal values rather than identifying with what is extrinsic to them, such as certain social statuses or economic situations.

Secondly, when people explore and ponder what are the core values they want to live through, they often need to zoom out and look at the big picture of their life, e.g., the obituary exercise in ACT is often used to invite the clients to think about what kind of value-based life they want to have. The process of zooming out to look at the big picture of our life is like mental time/space travel, and the studies show that the impermanence focus and less attachment to the present emotions caused by mental time/space travel has a beneficial effect in affect regulation (Kross and Ayduk, 2017).

Lastly, when people live by their values, they root their actions in a purpose greater than themselves and give their lives direction and meaning. Meaning is another fact that mediates the impact of values on affect regulation. Meaning-making refers to the human tendency to create coherent and meaningful narratives out of experiences, events, and emotions. It involves interpreting events in a way that gives them significance and helps individuals understand their place in the world, their purpose, and their values. From the CBT perspective, human beings react to the meanings we attach to the situations rather than the situations themselves and the key part of the therapy work is to discover and reconstruct the

meanings we attach to the situations (Beck, 2020). In a culture that values productivity, technology and success, people's desire for meaning remains as strong as ever and more than 90 percent of people still believe their lives are meaningful based on a survey by University of Virginia and University of Missouri (Heintzelman & King, 2014). Meaning-making can help individuals find purpose in adversity, making sense of traumatic experiences, and seeking understanding in the face of uncertainty, which research links to good physical health and lower rates of mental disorders (Czekierda et al., 2017). The studies also showed that meaning-making in the highs and lows of life stories predicted affect regulation. Positive meaning-making in the highs and lows of life stories episodes predicted positive affect regulation while negative meaning-making in lows of story episodes predicted negative affect regulation (Cox & McAdams, 2014). By giving our lives direction and meaning, value-basing living helps us make positive meanings in low point stories episodes, which contribute to better affect regulation.

The value-based living impacts affect regulation via two mediators – cognitive appraisal and meaning-making, and the meaning involved in value-based living in ACT is mainly at the consciousness level. Therefore, if we try to fit this into the framework of the two affect-regulating systems discussed earlier in this chapter, then value-based living as an intervention in ACT involves the improvement of the two affect-regulating systems but mainly targets the secondary affect regulating system.

Conclusions

Overall, this section synthesizes existing knowledge on ACT's role in addressing affect dysregulation and delves into the working mechanisms through which the core

processes of ACT (Defusion, Acceptance, Value-based living) develop the capacity of affect regulation. The findings suggest that ACT offers a promising approach to enhance affect regulation and improve psychological well-being.

Best Practices in Using ACT for the Treatment of Affect Dysregulation

Pain and suffering are inherent parts of life. ACT as a therapy modality acknowledges this truth and allows individuals to live authentically and embrace life in its entirety. Rather than "fixing the problem" mode (the problem is the enemy) in other modalities such as CBT, ACT teaches clients to learn to "embrace the problem", to be bigger than what's bugging them, and to reduce the suffering caused by attachment to states we want and resistance to states we don't want. This approach is particularly useful when it is applied to the treatment of pains such as complicated grief and loss, or existential anxiety where the best solution is to admit there is no solution and to move toward value-based living by accepting the harsh facts of the human condition and making meaning out of it. This chapter is going to describe best practices based on the acceptance and value-based living parts in ACT respectively, and then end with the questions that I haven't found an answer to and require further research and reflections in my future career.

Best Practices on Acceptance in ACT

1) Psychoeducation on Acceptance

For lots of clients, when they hear the concept of acceptance for the first time in their life, they feel that acceptance sounds very counterintuitive as people have gotten used to the Doing (problem-solving) mode instead of the Being mode because in growing up what our school education system and culture taught us is about how to solve problems. Therapists need to explain why experiential avoidance and suppression that work in problem-solving situations with the external world won't work well in dealing with our inner suffering. In ACT textbooks, this stage of therapy is called "creative desperation" or "creative

hopelessness" which leverages exercises such as the Quicksand metaphor, the Person in the Hole metaphor, to help clients understand that focusing on controlling thoughts and feelings may not be productive. It allows clients to be open to new possibilities about other approaches to deal with their thoughts and feelings (Hayes, Strosahl & Wilson, 1999).

2) When to accept?

Speaking from my practicum experience, the timing of introducing the concept of acceptance is also very important. For the clients with severe mental health challenges, they often take their thoughts as reality and are unable to differentiate between thoughts and reality. For example, a client with severe relational trauma may have deep shame and firmly believe that everything is her fault and she doesn't deserve love from anyone. It may take months to improve her self-esteem and make her aware of the source of those thoughts and produce a little distance between reality and her thoughts. Without the work that helps the client improve her sense of self, understand how her past shapes the way she perceives the world and herself currently and become aware that her thoughts are distorted, the introduction of the concept of acceptance will be too early and won't work well. Another example is the mental health challenges with the root cause that comes from self-estrangement, disconnection with clients' own thoughts, feelings and wishes while the clients are not aware of this self-estrangement. For this type of client, the therapeutic work needs to begin by addressing the articulation of unarticulated unconscious feelings, and thoughts, differentiating clients' actual thoughts, feelings, and wishes from what clients believe they should feel and think. Before introducing the acceptance interventions, the therapists need to help develop the

capacity for such articulation and awareness where the restrictive and self-estranging personality has consistently prevented it.

3) How to accept?

Through psychoeducation and exercises cultivating self-compassion, the acceptance in ACT is done by the mode of mind "welcoming and allowing" rather than "dissociating". Therapists need to teach clients that the attitude toward negative thoughts is invitational and compassionate. Therapists need to check with clients if there is any resistance to acceptance during those acceptance exercises. If there is resistance, therapists need to normalize the resistance as a coping strategy to protect clients at some point of their development period although now it has become maladaptive. If the intensity of resistance is strong, therapists need to put acceptance aside and explore the reasons behind resistance and practice accepting the resistance first. This sounds paradoxical but speaking from my practicum experience normalizing and validating the resistance is very helpful for developing the therapeutic relationship as clients feel that they are validated and their struggles with the pains are understood by their therapist. One of my clients told me that to be heard and to be seen itself is to be uplifted. The other, more extreme case is that some clients have no idea how to accept their thoughts and feelings in a *compassionate* way. One of my clients with severe relational trauma who grew up in a family with domestic violence told me she felt she had never experienced love and compassion and had no idea how to love herself, not to mention accepting her pains with love-kindness. People learn to love from being loved, and for this type of client therapists need to be very patient, spending more time in the therapy work of developing the capacity for self-compassion before moving to practice accepting the pains.

Unconditional positive regard from the therapist probably is the best way to offer such a client a corrective emotional experience so that she can learn how to love and accept herself through right-brain-to-right-brain co-regulation with the therapist, and then gradually learn how to apply this to her life outside of the therapy room.

4) What to accept?

What ACT teaches clients to accept is their unpleasant thoughts, emotions, and bodily sensations rather than their changeable situations. For clients who contact the concept of acceptance for the first time in their life, it is easy to get confused about the content of the acceptance and they might feel they are not validated by their therapists as they think their therapy goal is to solve rather than accept the problems or painful situations. However, the paradox of life is when we can accept the problems and pains, that is often when healing and changes could occur. Therapists need to clarify what the clients need to accept and the nuance between the contradiction and paradox, to make sure the client understands the concept of acceptance accurately, otherwise, the misunderstanding of this concept may impact the therapeutic relationship.

Best Practices on Commitment in ACT

We need to be cautious about the timing of exploring which values the client wants to live based on our therapy work. The design of ACT is to liberate the energy from fighting with unpleasant thoughts and emotions and shift it to pursue value-based living. That is to say, if the therapy work has not gotten to the stage where clients are willing to buy into the concept of acceptance and started to practice accepting unpleasant thoughts and emotions,

they usually would not be interested in exploring value-based living as they may perceive this has nothing to do with their pains, which is the key therapy goal they come to the counselling room with. In addition to this, psychoeducation about the relationship between pains and values also needs to be provided to clients - pains and values are actually like the two sides of one coin. For example, it is very likely for a client with social anxiety what the client values is connections with others, otherwise, the person would not be socially phobic. In our pain, we are given some guidance toward our values, and in our values, we find our pain. ACT textbooks provide useful exercises about this, e.g., getting clients to use a note card, and write down on one side something that's painful about what they're experiencing and on the other side of the card what the pain says about what they care about (Hayes, 2010).

As the paper mentioned in chapter two, value-based living impacts affect regulation via two mediators – cognitive appraisal and meaning-making. Choosing the top values on which we would like to live are about meaningful self-expression, which requires a certain strength of ego and sense of self. If the client's sense of self is still a problem, the therapy work needs to address and strengthen the sense of self first. For example, a client with severe relational trauma and self-loathing may be invited to ponder if they could create their own culture and choose the top three values to live based on meaningful self-expression. Their first reaction to value-based living and meaningful self-expression may be fear and being unsure of what values to choose. For this type of client with a lack of a strong sense of self, I would do more work on the sense of self first and save the value-based living for a later stage, e.g. the consolidation phase of the therapy work.

Finally, value-based living could not only be helpful in the treatment of affect dysregulation for clients but also helpful in the affect regulation of therapists when they are in stressful therapy sessions, which ultimately improves the efficacy of the treatment via the positive impact on the mind state of therapists. The book Values in Therapy (LeJeune & Luoma, 2019) suggests that therapists explore the top values that they would like to base their life on and bring to the therapy work. Because the therapy work with clients with severe mental health challenges is often stressful and arouses unpleasant emotions in therapists, they may feel anxious when they get stuck in the case and can't make progress as they expect, or they may feel parallel feelings such as anger, sadness, anxiety about clients or be triggered due to countertransference. When we feel anxious or stressed, we usually tend to shift to the Doing mode and want to solve the problem for the client instead of being in the Being mode and able to hold space for a client. When strong emotions are aroused in us, our cognitions may be distorted, and we may act out and be driven by those strong emotions. With value-based therapy instead of goal-based therapy (whether each individual therapy session has met its goal), the therapist could regulate their emotions better by focusing on the meaning-making of their work in the long run instead of the progress of each individual session. In addition to this, one of the key functions of therapy is right-brain-to-right-brain communication so that clients develop the capacity for affect regulation through co-regulation with their therapist, based on the value-based therapy where the therapist could deliver better affect co-regulation for their clients during the sessions.

Speaking from my practicum experience, as a beginning therapist I often felt very anxious during the therapy session especially when the cases were very challenging, or the

clients had strong accents (I'm not a native English speaker). The conscious and unconscious anxiety often made me want to bring my agenda instead of beginner's mind to the therapy sessions and want to control the conversation consciously or unconsciously or speak verbosely. Since I started value-based therapy and chose compassion as my top value for my professional work, I felt greatly relieved. When I focused on whether I had done my best to deliver compassion in my therapy work rather than the progress of each therapy session, I could feel my anxiety alleviated. As long as we are attached to self-image, we would be self-centered and focus on sense of achievement so that we would have no complete compassion for others (May, 1987). Can we provide our clients with unconditional positive regard, not only at the conscious level, but also at the unconscious level? For the latter, only when we don't focus on our self-image as a therapist and on proving ourselves to be a good therapist, will we be liberated from the cage of self-doubt and self-proving to deliver unconditional positive regard or compassion to our clients so that they can have the best corrective emotional experience in the therapy room.

Questions for Further Discussion

This master's program in Counselling Psychology is the starting point of my journey as a therapist. Similarly, I also take this capstone project as a starting point for learning affect regulation and the best practices of ACT as a modality for the treatment of affect dysregulation. Therefore, in addition to summarizing the best practices of ACT in this chapter, the paper also points out the following two areas in which I haven't found a mature answer during the project research, and I think require further exploration in my future career.

1) **Self-as-context as the treatment of affect dysregulation**

The sense of self and affect regulation are closely associated. The inability to regulate emotional arousal also impacts the development and maintenance of a sense of self (Linehan, 2014). This explains why the issue about the sense of self, such as low self-esteem or self-loathing is a common problem for many clients with affect dysregulation. As children they were unable to understand what is in their parents' inner world and make sense of what happened to them, so they internalized their parents' criticism and emotional abuse, and become the way they were treated. They turned the aggression inward and felt shame about themselves. In ACT, self-as-context regards all thoughts and narratives about self as the conceptualized self. By helping clients realize those are just the conceptualized self - the stories they made up in their minds, therapists can help clients become less attached to their negative narratives about Self and learn to accept them just as thoughts instead of reality. A question that clients often ask in the process of exploring the sense of self is "If all those negative narratives are conceptualized self, then who am I? Who is the true Self?" Speaking from my practicum experience, it is helpful to explore the concept of the true self and the nature of consciousness if clients have curiosity about those concepts and are interested in spirituality. However, if clients are not interested in those concepts or feel the concept of self-as-context too abstract to understand, it is more effective to shift from the negative narratives to the positive narratives on Self by beginning with tapping into the client's strengths and qualities that can't be taken away no matter how hard their life is. The story of the victim and the story of the hero are just two sides of the same coin, but if it is hard for the client to grasp the concept of conceptualized self, especially for teenagers whose prefrontal cortex responsible for meta-cognition capability is still under development, shifting the story of the

victim to the story of the hero seems to be a better way to produce positive emotions for affect regulation. Even though for clients who can understand the concept of self-as-context, finding positive narratives about Self is also helpful for affect regulation and paves the way for transitioning to the ultimate goal – all concepts are just concepts instead of True Self. To put it another way, if healing is about wholeness and balance, then the stage where therapists help clients find out the positive narratives about self is used to balance negative emotions caused by negative narratives before pointing out the nature of the conceptualized self. Speaking from my practicum experience, it seems the route (Negative narratives about self → Positive narratives about self → Conceptualized Self vs True Self) or (Negative narratives about self → Positive narratives about self) in the healing process works better for most clients than the route (Negative narratives about self → Conceptualized Self vs True Self) in the treatment of affect dysregulation and improvement of the sense of self. During the Capstone project research, I haven't found literature on this topic to verify or challenge my current point of view on this. I will keep exploring this question in my future career and let my future clients be my teachers to help me better understand these issues.

2) The efficacy of ACT in the treatment of the primary affect-regulating system

The mindfulness-based interventions in ACT mainly stay at the cognition level while in other modalities such as DBT, Mindfulness-based Stress Reduction (MBSR), and Mindfulness-based Cognitive Therapy (MBCT), the mindfulness-based interventions involve practices at the somatic level and have clear requirements on the minimal number of hours for somatic practices such as sitting meditation and body scan exercises between therapy sessions. For example, the MBSR program requires at least two 45-minute body scan

meditation exercises during the first week of the program and at least two 30-minute sitting meditation exercises during its second week. ACT alone seems not enough for the treatment of affect dysregulation for clients with severe mental health challenges such as complex trauma or chronically suicidal clients. Therapists need to incorporate somatic-level interventions with ACT to reinforce the development of the capacity of the primary affect-regulating system as cognition-based or talk therapy is not deep enough to address the primary affect-regulating system which is embodied at the unconscious (limbic system) and somatic level. This is in line with Harris's (2021) book Trauma-Focused ACT in which he provides practical approaches on how to incorporate somatic-oriented interventions with the ACT model for better efficacy. From the neuroscience perspective, somatic-oriented mindfulness interventions address the primary affect-regulating system by developing the ability to access bodily sensation – *interoception* (Payne, Levine, & Crane-Godreau, 2015). Over the past decade there has been a rapid increase in research on interoception, its relation to the insular and anterior cingulate cortices, and its relevance to the sense of self and emotional awareness. Interoception is the perception of sensations from inside the body and includes the perception of physical sensations related to internal organ function such as heartbeat, respiration, satiety, as well as the autonomic nervous system activity related to emotions (Cameron, 2001; Craig, 2002). Much of these perceptions remain unconscious; interoceptive awareness involves processing of inner sensations so that they become available to conscious awareness (Cameron, 2001). Importantly to this paper, there is empirical evidence that interoception facilitates access to unconscious emotion (Price & Hooven, 2018) and there is a connection between interoceptive awareness and affect regulation (Craig,

2015). However, the research on the therapeutic utility of attending to interoception is still at an early stage, and much work is still needed to have a clear picture of how interoceptive ability contributes to emotional awareness and regulation. From the clinical application perspective, the research that focuses on the effectiveness of somatic-level mindfulness interventions on developing the capacity of the primary affect regulating system is sparse. I could not find literature that compares the effectiveness of ACT and DBT on the treatment of mood disorders and suicidal ideation in which the core malfunction is affect dysregulation. This is another topic I'll be following up on after this Capstone project. In my future career I will keep an eye on the development of neuroscience, especially in areas like mind-body interactions and emotion theories, as I believe the development of clinical psychology in the twenty first century cannot be separated from neuroscience.

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