

Chapter 5

Takeaways –

- Nonverbal behavior is a primary mode in which emotion is communicated through facial expression, eye gaze, tone of voice, bodily motion, and the timing and intensity of response.
 - Children shape and develop their own emotional behaviors by observing peers and adults facial and emotional expressions.
 - Experiences in relationships of attachment and within our cultures shape the neural circuitry involved in a range of emotional experience and expression.
 - Emotion is not limited to one specific circuit.
 - The limbic region is involved in emotion expression and processing, as well as face recognition, affiliation, and theory of mind.
 - Emotions perform both regulatory functions as well as are regulated.
 - A variety of theories share common themes, such that emotions involve complex layers of processing and are constantly interacting with the environment.
 - This involves cognitive processes (e.g., appraisal or evaluation of meaning), physical changes (e.g., endocrine, autonomic, and cardiovascular changes).
 - Emotions involve a subjective reaction from the individual.
 - They represent dynamic processes created within socially influenced, value-appraising processes of the brain and the interaction of the individual with the environment.
 - They reflect the integrating processes that link various systems in a dynamic flow across domains and through time.
 - Changes in integration.
 - They ready us for action.
 - When integration is enhanced our state of well-being is improved and we move toward a more harmonious way of living.
 - They indicate shifts in integration internally and interpersonally.
 - Initial orienting response is the state of increased alertness regarding a message that something is happening here and now (e.g., internally or interpersonally).
 - Following the initial orienting response elaborative appraisal and arousal discern whether this input is “good” or “bad” (i.e., move towards or away from stimuli).
 - Emotions prepare the brain and body for rest or action.
 - Discrepancy helps individuals determine when the external features of a stimulus do not match internal expectations, resulting in tension when there is discord.
 - Primary emotions describe the shifts in brain state that result from the initial orientation and elaborative appraisal (e.g., anger, fear).
 - Then the brain appraises meaning of the stimulus reflecting hedonic tone or valence as being either negative or positive.
 - The brain can then appraise their appraisals and define the most constructive thought patterns and emotional experiences.

- After the first two stages emotions can become differentiated into further defined states that have evolved into patterns of activation.
 - Some individuals need to be taught how to engage with their emotions, as not to develop destructive appraisals or out of control states.
 - Cross-cultural similarities in the manifestation of categorical emotion suggest that the human brain and body may have characteristic, inborn, and physiologically mediated pathways for the elaboration of these states of mind (e.g., happiness, sadness).
 - Both experience and genetics shape emotional expression.
 - The way an emotion is perceived externally is called affective expression (i.e., affect).
 - Facial expressions, voice, and bodily motion (i.e., vitality affects).
 - Individuals display more affect when surrounded by others compared to when they are alone, as emotions are social.
 - Feeling is the conscious awareness of emotion or affect.
 - The way parents attune to their child's affect reveals the inner world of the child and aligns with the child's inner experience optimizing integration.
 - Individuals can attune to other's vitality affects across sensory vitalities (e.g., viewing joy on a person's face can be mirrored in another person by the elevation in their voice).
 - Depression is associated with an individuals' inability to perceive emotional expressions of others.
 - Mood is the general tone of emotions across time (e.g., optimistic versus pessimistic).
- Appraisal centers of the brain involve the amygdala, anterior cingulate, and orbitofrontal cortex.
 - External stimuli enter the brain via sensory systems.
 - This sensory input is perceived and filtered through the thalamus and passed on to the amygdala and other areas where they are assigned value.
 - Resonance circuits allow us to align our internal states with those around us.
 - The orbitofrontal cortex, anterior cingulate, midline structures, prefrontal areas, mirror neurons.
 - Insula allows us to practice interoception (i.e., awareness of our own experiences)
 - Resonance circuits allow us to tune into others and our own awareness.
 - Information from these areas is passed onto the hippocampus for cognitive mapping.
- Emotions is fundamental to integration of meaning-making, social, bodily and mind-mapping regions that are distributed throughout the brain.
 - The amygdala is the cluster of neurons that receives and sends input from the outer world and inner emotional response.
 - This nonconsciously assigns significance to the stimuli without conscious awareness.
 - Designed unconsciously to create a self-fulfilling prophecy.

- The basis for phobias.
- Consciousness is understood as the integration of information in the brain that “gives rise” to the experience of knowing of being aware.
 - Perceptual representations from external and internal stimuli are functionally connected in the dorsolateral prefrontal cortex where attention is modulated where particular representational profiles can be focused (i.e., an aspect of working memory).
 - Left hemispheric consciousness differs from right hemispheric consciousness.
 - Emotions help activate the dorsolateral prefrontal cortex.
 - Awareness of bodily states is believed to be the gateway to becoming conscious of our emotions.
 - Our gut reactions can profoundly influence our decision-making without our awareness of their impact.
 - Feeling is our awareness of some of these bodily states.
 - Emotion may not always be conscious, but they create meaning in our lives regardless of our awareness.
 - A lack of awareness is a lack of binding of emotion to consciousness.
 - Consciousness of emotions is essential to changing reflexive reactions.
- Emotions allow us to discern what is valuable to integrate.
 - Value systems in the brain function by shaping states of arousal.
 - The appraisal of stimuli and the creation of meaning are central functions that occur with the arousal process of emotion.
 - Mirror neurons learn from experience.
 - Mirror neurons:
 - Must be a part of a network that has both motor and perceptual processes
 - Responds to specific stimuli (i.e., acts with purpose behind them)
 - Perceive that the actions of another’s predictable motion is used to create an image of that person’s mind
 - This other person’s mental image is then used to initiate behavioral imitation and internal stimulation.
 - This allows us to empathetically imagine what is going on in another person.
 - Internal stimulation the process of absorbing and resonating with the internal state of another.
- Awareness of our own internal states allows us to understand others internal states.
 - How we come to know who we are is shaped by communication that we have had with others.
 - If we have been met with confusion and unpredictable actions with hostile intention, then our internal sense of coherent inner self will be compromised.
 - Being around caregivers who are attuned to our internal worlds who are reliable provide us with mirror experiences that enable us to have a

coherent and flexible sense of both our inner and interpersonal selves in the world.

- The prefrontal cortex is integral to the creating meaning and emotion.
 - Response flexibility encompasses autoethic consciousness, social cognition, emotionally attuned communication, and working memory.
 - A coordinated process of incorporating sensory, perceptual, and appraisal mechanisms resulting in personally meaningful responses.
 - This allows individuals to approach life with perspectives of themselves in the past, present, and future, resulting in a well-developed and integrated functioning.
 - This benefits ongoing development, subjective experiences, and interpersonal relationships.
 - Involved in the marshmallow effect (i.e., delayed gratification).
 - State-dependent: Internal and interpersonal contexts can promote or inhibit the integrative mechanism on which they were created (i.e., an integrative capacity).
 - Developed from emotional connections with attachment figures (e.g., eye contact, face to face communication, and affective attunement).
- Emotion is fundamental aspect of attachment relationships.
 - Earliest form of communication.
 - Sharing basic appraisal and arousal.
 - The reciprocal collaboration within contingent communication facilitates response flexibility.
 - Integrative communication results in integrative development.
 - The signals in the body also shape our emotions.
 - Our awareness of our facial muscles and body tension let us know how we feel.
 - Social experiences influence emotional expression more than genetics alone.
- Each hemisphere processes different aspects of emotion.
 - Left hemisphere generally involved with approaching, positive affect, sociability, and exploration. Tight focus of attention. Picks up on language. Details of contextual meaning. Assertive motivational state.
 - Right hemisphere generally involved with withdrawing, negative affect, and fear and anxiety. Broad focus of attention. Picks up on nonverbal signals. Representing social context.
- Emotion is inherently subjective and an interpersonal experience, involving interaction with the environment and the evaluation of meaning.
- Energy flow is a basic aspect of primary emotions.
 - The changing activations in a persons' mind creates the experience of the inner and inter self.

Questions/Considerations –

Emotions perform both regulatory functions and are regulated. They are subjective, as well as possess similarities cross-culturally. They are dynamic processes; both perceived and experienced. Appraisal influences how individuals experience emotions (e.g., nervousness versus

excitement). The differences between left hemispheric functions and right hemispheric functions (e.g., left hemisphere is asserting; right hemisphere is withdrawing). Individuals who experience more anxiety have an over activation on the right hemisphere compared to the left. It is important that we help individuals understand the power and influence of emotions, especially on the developing mind of an infant as it profoundly shapes their experience of the world.

Chapter 6

Takeaways –

- Our perception of reality is shaped by activity patterns in the brain (i.e., state of mind).
 - Clustered in specialized units for sight, taste, words, sensations.
 - The way individuals assemble this information is their perception of reality.
 - Energy flow that presents as a category is representing our perception of the world around us.
 - Energy flow is shared between people through the form of communication.
 - The patterns of our genetically designed brains and interpersonal connections and communication shape the development of the mind.
 - We have perceptual and conceptual constructions of reality.
 - Each brain hemisphere is responsible for processing different inputs.
 - These hemispheres can process together and independently to construct a person's reality.
 - Repeated patterns of neuronal activations help establish continuity in the individual's representation of reality.
- Attachment patterns influence the neuronal group activations constructing our reality.
 - Avoidantly attached children with their dismissing parents have neuronal patterns that are logical and linguistically based, activated primarily in the left hemisphere.
- Left hemispheric functioning allows individuals to see the details but they are unable to see the bigger picture.
 - A predominance of left-hemisphere processing makes it difficult for individuals to read others' nonverbal communication and sense emotional expressions of others or self.
- After a stroke that impacts the right hemisphere, an individual has a decreased capacity to recall autobiographical memory.
 - Memory of facts are the left hemisphere.
 - Memory of episodes of time are the right hemisphere.
- Balance between left and right hemisphere processing is optimal for learning, interpersonal connections, and integration.
- Mental symbols are created in our minds (i.e., neuronal groupings) that contains information regarding the energy flow that creates an effect, creating a representation of our reality.
- We experience the world as we are through our subjective lens.
- There are two dimensions of subjective mental life, our experience of knowing, and our experience of that which is known.
 - Brain is the embodied mechanism through energy and information flow;
 - The brain cannot process all types of information.

- Mind is the embodied and relational process that regulates and subjectively feels that flow;
 - Relationships are the sharing of the flow.
- Our body is limited in its experience it can take in.
- Our explicit memory allows us to represent objects and the self in space and time.
- We must then have the capacity to transform these memories into adaptations of generalized representations to learn and adapt to repeated experiences in the world.
 - The four E's:
 - Information is enacted and embodied (i.e., the inner mind), which are then extended and embedded (i.e., inter mind).
 - The brain structure in the present moment shapes our subjective experiences in life.
- How we come to construct our reality is genetic predisposition and lived experience.
- Who we are is both inter and relational.
- The mind has distinct symbols for energy “in-formation.”
 - Representations of a rock are a dynamic energy flow.
- Representational resonance at whatever pure level of energy flow enables us to feel connected to each other.
- Sensory representation contains information signifying sensations, including input from the outside world, from the body, and the brain.
 - External sensory data can be seen, heard, tasted, smelled, and touched.
 - This input enters the body through the sensory receptors which travel to the brain, where they are usually processed in the thalamus.
 - This input is processed and compared with memories from prior experiences to categorize the sensations into perception.
 - Internal sensory data include bodily sensations.
 - Passed up through the spinal cord and the vagal nerve.
 - Input is distributed to the brainstem, the hypothalamus, and the anterior cingulate and insula, especially the right side (i.e., little processing, top down).
 - Symbol carries information that represents something other than itself.
 - Presymbolic representation – close to the thing itself prior to being processed.
- Perceptual representation is a more complex experience, as it represents a constructed bit of information created from the synthesis of the sensory input and past memories from derived mental models.
- Mindful awareness is the mental state with the intention to be in the present moment with an open stance toward oneself and ongoing experience, distinguishing between sensory and perceptual streams and not getting swept away in the top down filtering of life.
- Mental states influence how we construct our reality.
- Conceptual representations our ability to perceive things without are ability to describe them in words (i.e., reading between the lines).
- Linguistic representations contain information about sensations, perceptions and concepts within socially cared packets that we call words.
 - Words can be seen, heard, felt, spoken, and written.
 - Words allow us to pass on information beyond space, time, and between people.

- Information is primarily automatic, and some people are more aware of this information processing than others.
- Awareness of the body is correlated not only with enhanced self-understanding, but also with empathy and compassion.
 - Altering energy flow through the body can help PTSD.
- Primary consciousness occurs when our basic sensory-perceptual processes resonate with our conceptual ones.
 - The simultaneous activation of perceptual (i.e., knowing) of the categorical (i.e., of the known) neuronal groups produces the sensation of primary consciousness.
 - Higher order consciousness is when an individual can reflect back and forward in time.
 - This Auto-noetic is a function of self-awareness.
 - Consciousness encompasses:
 - Access to information
 - The subjective quality of the experience
 - The experience of being aware.
- Individuals with avoidant attachment have minimal access in their awareness to the nonverbal signals from other or even themselves, that reflect primary emotional states, as they did not experience this resonance from their caregivers, therefore their brain did not develop the capacity to process or recognize this information.
- Culture shapes not only our emotions and the ways we relate to one another but the very perceptions we have of ourselves in the world.
- The typical functioning of the brain involves “cross talk” between both sides of the brain.
 - The brain including the amygdala, orbitofrontal cortex, hippocampus, and lateral prefrontal cortex is divided into two halves.
 - The two hemispheres are connected through the corpus callosum.
 - Our subjective perceptions are shaped by the emergent processes in these differentiated regions of the brain.
 - Balance between left and right hemispheres is optimal integration between activation and relaxation.
 - Emotion exists on both sides of the brain.
 - Emotions are directly influenced by the right brain’s representations of the body’s states.
 - Right brain helps regulate better than the left brain.
 - Right brain able to create and integrate higher levels of emotion than the left.
 - Right brain emotions may be more anger and sadness, whereas left brain is associated with more contentment and joy.
 - Blockage on the right hemisphere may shield a person from feeling anxious.
 - Keeping the left brain optimally linked and differentiated from the right allows for the existence of two extremely different but vital and important ways of knowing.
 - The right brain is better at interregional integration, having more associational links, integrating information in a horizontal fashion, creating a contextual pattern of the world.

- The left brain is better at intraregional integration, connecting a sensory perception with language, more top-down processing. Linking specific inputs with specific outputs.
- Emotional communication and affective attunement become the medium in which the child's cognitive capacities develop.
- Women have been found to be more bilaterally distributed in their right and left-brain functions, socially and genetically influenced, predominantly social.
 - By the third year of life, information is processed through the corpus callosum and information is exchanged and energy flow between both right and left hemispheres.
- The human brain remains open to change throughout the lifespan.
- The repeated activation of specific neuronal pathways reinforces the strength of connections.
 - Windows of opportunity during which the activation of specific functions is essential for continued development in that area.
 - A child learning language.
 - Attachment relationships.
- A child's brain is able to take in information regarding the subjective experience of another person.
 - Child's theory of mind (i.e., awareness of another person's intentions, awareness, and attention).
 - In cases of autism, a child does not have the circuitry to detect the experience of another.
 - A lack of attunement in a child can lead to impairments in this circuitry.

Questions/Considerations –

Our perception of reality is shaped by activity patterns in the brain (i.e., state of mind). Energy flow is shared between people through the form of communication. The patterns of our genetically designed brains and interpersonal connections and communication shape the development of the mind. There are two dimensions of subjective mental life, our experience of knowing, and our experience of that which is known. How we come to construct our reality is genetic predisposition and lived experience. Important to consider the impact of lived experiences on genetic predispositions. The human brain remains open to change throughout the lifespan. The repeated activation of specific neuronal pathways reinforces the strength of connections.