

EMOTION: THE VITALITY AFFECTS

The Affects of Attunement, Vehicles of Intersubjectivity & Social Engagement

The **vitality affects** are the micro-affects through which **moment-to-moment fluctuations** in **attunement** are expressed. They refer to subtle, ongoing, moment-to-moment, **qualitative shifts in arousal, energy, flow, feeling, and rhythm**. Their “elusive qualities are better captured by dynamic, kinetic terms, such as “surging,” “fading away,” “fleeting,” “explosive,” “crescendo,” “decrescendo,” “bursting,” “drawn out,” and so on....The vitality affects are experienced as dynamic shifts or patterned changes within ourselves” (Stern, 1985).

The dyadic regulation of affective states through the vitality affects, i.e., through **fluctuations in voice, gaze, rhythm, touch, and timing**, is a fundamental aspect of interpersonal interaction throughout the lifespan. **The vitality affects are to emotional communication what words are to verbal communication.**

The **vitality affects** are **the affects of attunement, intersubjectivity and social connection**: they both express it and are vehicles for their entrainment. As a function of their ephemeral and fluid nature, they are well suited to dyadic coordination and mutual affective sharing.

EMOTION: THE CATEGORICAL EMOTIONS

The Markers of Disruption, the Vehicles of Repair

◆FEAR ◆ANGER ◆DISTRESS ◆JOY ◆GRIEF ◆DISGUST ◆SURPRISE
 ◆ EXCITEMENT ◆ SHAME ◆ THE INNATE EMOTIONS OF HUMAN RELATING

“Each emotion obeys a logic of its own, and makes deductions which no other logic can draw” (James, 1902)

- **BIOLOGICAL SIGNATURE.** Each categorical emotion has a distinctive biological signature, i.e., a deep-rooted bodily response with its own specific face, body, physiology and arousal pattern.
- **RAPID APPRAISAL:** Emotions provide a rapid appraisal of the environment: the salience of particular cues that need to be attended to increases, thus enhancing motivation and focused attention. This appraisal leads to body arousal, the release of adaptive action tendencies, and a re-appraisal.
- **COMMUNICATION: ATTACHMENT SIGNALING SYSTEM.** The categorical emotions communicate to self and other information about the state of the organism at the moment of arousal. They are the primary signaling cues between attachment figures.
- **BODY AROUSAL:** Each categorical emotion prepares the body for a different kind of response. Emotions are in essence impulses to act, the instant plans that evolution has instilled in us.
- **UNLOCKING THE UNCONSCIOUS.** Each categorical emotion acts as a magnet for experiences that are organized under its aegis. Each categorical emotion draws to it and facilitates the emergence of memories, perceptions, fantasies, relational configurations and ways of being. It “lights up the network.”
- **PRIMING OF ADAPTIVE ACTION TENDENCIES.** Each emotion offers a distinctive readiness to act which points us in a direction that has worked well to handle the recurrent challenges of human life. The completion of each categorical emotion activates an adaptive action tendency.

EMOTION: THE CATEGORICAL EMOTIONS

Their Phenomenology

- ◆ FEAR/TERROR : eyes frozen open, pale, cold, sweaty, facial trembling, with hair erect
- ◆ ANGER/RAGE: frown, clenched jaw, red face
- ◆ DISTRESS/ANGUISH: cry, eyebrows down, tears, attempt to hold it in
- ◆ ENJOYMENT/JOY: Smile, lips widened in and out, Duchenne smile with crinkles around the eyes
- ◆ SADNESS/GRIEF: downcast gaze, crying, rhythmic sobbing
- ◆ DISGUST: lower lip lowered and protruded, extruded tongue
- ◆ SURPRISE/STARTLE: eyebrows up, eye blink
- ◆ INTEREST/EXCITEMENT: eyebrows down, track, look listen
- ◆ SHAME: downcast eyes, gaze aversion, squirming, hiding, inhibition of thought and speech
- ◆ THE INNATE EMOTIONS OF HUMAN RELATING: positive affect, eye contact, and leaning forward in response to engagement; negative affect, avoided eye contact (eyes down or away) and withdrawal in response to disengagement. Include pride and shame. Calm in response to safety, anxiety and distress in response to separation, grief in response to loss.

Auxiliary to Positive Affect

- ◆ SHAME/HUMILIATION: eyes down, head down

EMOTION: THE CATEGORICAL EMOTIONS:*

Their Adaptive Action Tendencies

- ◆ FEAR/TERROR : flee from danger, run towards protection, freeze
- ◆ ANGER/RAGE: fight, assert, defense self against intrusion
- ◆ DISTRESS/ANGUISH: seek support, evoke/elicit care
- ◆ ENJOYMENT/JOY: expand, connect, engage, broaden & build
- ◆ SADNESS/GRIEF: withdraw, recollect, reflect, mourn
- ◆ DISGUST: expel, repel, avoid the object
- ◆ SURPRISE/ STARTLE: pay attention
- ◆ INTEREST/EXCITEMENT: broaden & build, explore
- ◆ SHAME: hide, shrink, withdraw, isolate (evolutionary mechanisms related to social rank and status
- ◆ INNATE EMOTIONS OF HUMAN RELATING: engage, respond with pleasure to intersubjective contact & distress to intersubjective withdrawal, delight in mirroring and being mirrored. Seek in the face of separation, grief in response to loss.

Auxiliary to Positive Affect

- ◆ SHAME/HUMILIATION: hide, withdraw self

"Acts must be carried through to their completion. Whatever their point of departure, the end will be beautiful. It is (only) because an action has not been completed that it is vile." (Jean Genet)

* Emotion: from the Latin, to move

AFFECTIVE NEUROSCIENCE

Panksepp's Seven Emotional Systems: Ancestral Tools for Living The CNS in Emotion Regulation

“Basic emotions are fundamental powers of the human mind that are of the utmost importance for both mental health and mental disorders. It is clear that all mammalian brains inherit a variety of emotional dispositions as ancestral tools for living” (Panksepp, 2009, p. 1)

- SEEKING
- FEAR
- RAGE
- LUST
- CARE
- PANIC (separation distress)
- PLAY

INTERPERSONAL NEUROBIOLOGY

The Right Brain

The CNS in Emotion Regulation

SOME QUALITIES OF THE RIGHT MIND

- non-verbal: facial expression, tone of voice
- dominant in emotion processing
- somatosensory
- faster than left in appraisal of facial expressions
- visceral and somatic states processed in the right brain circuitry
- more reciprocal connections with limbic system
- dominant in the human stress response
- coping with and assimilating novel situations
- empathy, identification with others, intersubjective processes
- autobiographical memory,*** self awareness
- perception of one's own body
- Self-related processing (SRP)

DYADIC AFFECT REGULATION & THE EXPERIENCE-DEPENDENT MATURATION OF THE RIGHT-BRAIN (Schore, Trevarthen)

- psychobiological state attunement
- right-brain to right-brain communication
 - attunement
 - gaze sharing
 - face-to-face contact
 - touch
 - entrained vocal rhythms
 - play
- the importance of dyadically-maintained positive emotions: rapidly metabolize negative affects and maximize positive affective states

INTERPERSONAL NEUROBIOLOGY

The Limbic System-Damasio's Work

The CNS in Emotion Regulation

SUBCORTICAL STRUCTURES (Damasio's Somatic Marker Hypothesis):
amygdala, periaqueductal gray, anterior cingulate, insula, brain stem

■ The very sense of who we are depends on structures deep within the brain involved in emotion, bodily states and homeostasis

■ Emotion, body sense and the regulation of body states are inextricably intertwined

■ All subcortical structures involved in the generation emotion are also related to the representation and/or regulation of body states

IMPLICATIONS FOR PSYCHOTHERAPY.

■ Access to the visceral, embodied experience is crucial in a therapy that holds, as we do, the experience of emotion as central to healing and transformation

■ Any psychotherapeutic work with emotion has to involve the body

■ Emotions can't be only talked about; they have to be felt and sensed, in our faces, in our bodies, in our muscles and in our viscera

INTERPERSONAL NEUROBIOLOGY

The Neurobiological Core SELF as Fundamental Integrator: Damasio, Panksepp

The CNS in Emotion Regulation

“The core-SELF, i.e., the respective neural networks, provides primordial neural correlates that represent organisms as living creatures” (Panksepp & Northoff, 2008; use of capitals in original).

“The True Self comes from the aliveness of the body tissues and the working of the body functions, including the heart’s action and breathing.[It is] at the beginning, essentially not reactive to external stimuli, but primary... (the True Self) collect[s] together the details of the experience of aliveness..... [and is] the summation of sensori-motor aliveness” (Winnicott, 1960, p. 148-9).

“[The core self is] a dynamic collection of integrated neural processes, centered on the representation of the living body, that finds expression in a dynamic collection of integrated mental processes” (Damasio, 2010, p. 9).

The neurobiological SELF

- is constituted of the coordinated functioning of subcortical midline structures in conjunction with cortical midline structures (with the periaqueductal gray at the relay center, massive interconnections link upper brainstem regions to higher medial regions of the frontal and prefrontal cortices, and vice-versa)
- fundamental integrative function
- automatic, affective, and action-based
- coherence
- self-related processing (SRP) and the self-related valuation of stimuli
- seeking (motivation): drive (energy), direction, reward (dopamine)

The bidirectional coordination of subcortical and cortical midline structures that constitutes the neurobiological core SELF is manifested through the fundamentally integrated affective/cognitive processes that give rise to

- identity
- agency
- ownership of experience
- behavioral coherence

INTERPERSONAL NEUROBIOLOGY

The Neurobiological Core Self & Self-Related Processing (SPR) (cont'd)

The Midline Structures of the NEUROBIOLOGICAL CORE SELF: Subcortical (Limbic) & Cortical:

The coordinated functioning of subcortical midline structures in conjunction with cortical midline structures is what constitutes the *neurobiological self*

- periaqueductal gray
- superior colliculi
- brainstem region
- connect to
- medial regions of the prefrontal cortex
- medial regions of the frontal cortex

The midline structures of the neurobiological core self have a bidirectional connection to and with

- insula
- anterior cingulate
- right hemisphere

SOME QUALITIES OF THE NEUROBIOLOGICAL CORE SELF

The self's activities are guided by self-related values, i.e., the values selectively accorded to environmental stimuli reflecting their salience to self – and those values being both unique to the individual and emergent.

- coherence, organization
- drive, direction
- self-related values: the values selectively accorded to environmental stimuli reflecting their salience to self; unique to the individual and emergent
- sense of identity
- agency, initiative
- ownership of experience
- behavioral coherence
- viewing the world through the lens of self-related values
- felt sense of “I”
- guided by recognition processes

INTERPERSONAL NEUROBIOLOGY

The Neurobiological Core Self & Self-Related Processing (SRP) (cont'd)

The SEEKING SYSTEM in SRP (Panksepp, Northoff)

The SEEKING system is “the active explorer inside the brain” (Panksepp, 2009, p. 9)

“This appetitive motivational system energizes the many engagements with the world as individuals seek goods from the environment as well as meaning from everyday occurrences of life. ...[It is] a system that energizes our intentions in actions.” (Panksepp, 2009, p. 9)

- motivational system, reward system: dopamine mediated
- cued by the felt sense of recognition
- direction, drive
- fuel for life: “neural energy,” vitality
- pleasurable

DOPAMINE, Fuel of the Seeking System

Dopamine is the fuel of the self's seeking. Like oxytocin, dopamine flows in conditions of low stress and threat (MacDonald, 2012, personal communication). In facilitating environments, i.e., in transference-based conditions, the seeking system of the neurobiological core self can come to the fore and epigenetically unfold. However, in affectively thwarting environments, where stress/threat are high, not regulated and thus cannot be rapidly metabolized (Schoore, 2009), the combo of oxytocin and dopamine is supplanted by the neurotransmitters of stress management.¹

¹ While dopamine and cortisol (the HPA axis) are inversely related, oxytocin and dopamine are congruent and positively correlated (MacDonald, 2012, personal communication).

INTERPERSONAL NEUROBIOLOGY

The Neurobiological Core Self & Self-Related Processing (SPR) (cont'd)

The Link with NEUROPLASTICITY (Doidge, Siegel)

The qualities of pleasure and reward are essential features for processes that support neuroplasticity (Doidge, 2007; Siegel, 2010): pursuits that are rewarding and pleasurable become recursive appetitive processes, where *more begets more* and thus the brain changes (Fosha, 2009a, 2009b; Fredrickson, 2001,2009; Ghent, 2002). Vitality and energy are the affective/somatic markers of such processes. Manifestations of seeking, in conjunction with the self-related valuation of stimuli, are to be found in experiences of agency, initiative, enthusiasm, and drive (From Fosha, in press, p. 8 in manuscript)

Manifesting neuroplasticity in clinical action transformance, positive affect, motivation/drive and energy are organically aligned (Fosha, 2010).

APPLIED INTERPERSONAL NEUROBIOLOGY

THE FELT CORE SELF: Positive² experiences of

- vitality, energy
- recognition
- meaning
- knowing, truth

The *felt core self*. Deeply felt moments of personal truth, vitality, energy, agency, and coherence from a self-related perspective, spontaneously emerge at meaningful moments of existence; they are also a feature of core state, the state of calm and integration that is the culmination of the transformational process. Deeply pleasurable --again pleasurable not in the sense of happy, but in the sense of feeling deeply right and true-- at these moments, the individual has a sense that “this is me.” Metaprocessing the experience of such moments leads to further unfolding: both the felt sense of “I” and the “this is me” experience deepen, consolidate and becomes more textured. This is the *felt core self*: it is as close as we get to an instantiation of the neurobiological core self in actual experience.

If the self that is evident at moments of self-at-best living is the diamond in the rough, the self that emerges in moments of core state experiencing, the *felt core self*, is a brilliant crystalline diamond, all facets sparkling, clean and sharp. Such moments allow us to directly witness, experience, and thus grasp the essence of core self through its phenomena and experiential manifestations .

There is something in such moments that is orienting, organizing and transformational. A paradigm shift (Kuhn, 1970) takes place: there is a re-organization of self based on *felt core self experiencing*, which affects self in both feed-forward and feed-back mechanisms. There is a re-representation of everything in light of the new experience: it is this new self, so to speak, that will now define the lens through which self-related processing will proceed from this point forward, including how the past is viewed.

² Where positive refers not necessarily to happy, but rather refers to experiences marked by a felt sense of feeling “right,” or “true.”

INTERPERSONAL NEUROBIOLOGY

The Insula

The CNS in Emotion Regulation

MEET THE INSULA (together with Anterior Cingulate)

- Thirst
- sensual touch
- Itch
- pain
- maternal and romantic love
- emotions: anger, fear, sadness, happiness, disgust, aversion
- sexual arousal
- inequity, indignation
- trust, empathy
- a feeling of unity with god
- the feeling of knowing
- homeostatic feelings: pain, cold, fullness,
- sudden burst of activity at moment of recognition
- adolescents with conduct disorder were found to have a significant decrease in grey matter volume in the bilateral AIC* that correlated with a lack of empathy and with aggressive behavior
- high-functioning people with autism displayed increased alexithymia and decreased empathy, both of which were correlated with reduced activation in the anterior insula*
- neuroplasticity: the volume of the insula increased in long time meditators (Lazar, 2005)

INTERPERSONAL NEUROBIOLOGY

The Insula and its GEMs (i.e., Global Emotional Moments): Bud Craig's Work

The insula summarizes and integrates all somatic and affective information from the body at a given moment in time and delivers it in a GEM (a global emotional moment)

- INTEROCEPTION – information, i.e., the sense of and from the body, visceral sensations, touch, pain and other feelings is integrated
- The bodily rooted sense of “ME,” the “material me,” a foundation for the sense of self rooted in the sense of the body in time, and might provide a foundation for subjective feelings, emotion and self awareness.
- SUBJECTIVE SENSE of feelings within a moving window of time
- RE-REPRESENTATION of the body in the brain (cortical representation of interoceptive state) and bi-directional connection with the ANS (autonomic nervous system)
- Engenders AWARENESS of self, others, environment
- GEM – a global emotional moment: “*a coherent representation of all feelings at one moment.*” The insula summarizes and integrates all somatic and affective information from the body at a given moment in time and delivers it in a GEM. A whole series of “global emotional moments” provides the basis for a time-shifting progression of representations of the sentient self across time. When we are moment-to-moment tracking, GEMs are what we are tracking: GEM-to-GEM tracking.
- When we ask the question “HOW DO YOU FEEL – NOW?”, it is the insula (and anterior cingulate) that answers it. The re-representation of the body in the insula – this constitutes a basis of the subjective evaluation of one's condition, our *felt sense*, our *gut feeling*. It underlies basic emotional states and is required for the motivation to make rational decisions that affect survival and quality of life.

INTERPERSONAL NEUROBIOLOGY

The Insula and its GEMs: Bud Craig's Work on the Energy Management Aspect of Emotion Regulation

“....The concept of energy management provides a novel basis for understanding psychophysiological attributes of emotion (as opposed to appraisal) and the relationship between emotional regulation and health.” (Craig, 2005).

In light of Craig's work, another way of stating AEDP's aim is to provide energy enrichment in the system, thus making available energy for life, through the processing of emotions necessary for survival

Left Insula --Energy Enrichment – the calm and connection system – activated by positive and affiliative feelings approach (appetitive) behavior, and group-oriented (affiliative) emotions

Right Insula – Energy Expenditure -- the arousal/stress system –associated predominantly with sympathetic activity, and thus with arousal, danger, negative affect, withdrawal (aversive) behavior, and individual-oriented (survival) emotions.

- Left Insula slows the heart, Right Insula accelerates the heart
- (Ventral) parasympathetic (left insula) vs. sympathetic (right insula)
- Approach behaviors (left insula) vs. withdrawal behaviors (right insula)
- Left Insula mediates orgasm, Right Insula mediates sexual arousal
- The Left Insula is selectively activated: when subjects smile or see a smile; when mothers look at pictures of their babies; during subjectively pleasant music
- The Right Insula is selectively activated during feelings of both disgust or trust; during anger, fear, heartbeat-related anxiety; during empathic feelings of either positive or negative valence
- Both Left and Right Insulas light up during compassion meditation

INTERPERSONAL NEUROBIOLOGY

Mirror Neurons

The Work of Rizzolatti, Gallese, Iacoboni

MONKEY SEE AS IF MONKEY DO

- single multi-modal neurons in the pre-motor cortex of monkeys (Broca's area in humans?)
- code action schemas
- mirror neurons fire both when an action is performed by the subject, and when the subject observes another performing the action
- mirror neurons fire in the same way regardless of whether the action is being performed by the self or witnessed in an other
- understanding of the actions of others through the generation of either a resonance or a matching within the self of what another is doing

IMPLICATIONS FOR PSYCHOTHERAPY: N. Wolf

- Mirror neurons are further evidence of the transforming power of action-based, rather than language-based, aspects of dyadic communication
- Implicit, procedural learning either through identification or resonance
- A possible neurobiological basis for mechanisms operating in
 - empathy
 - identification with the aggressor
 - the intergenerational transmission of trauma

APPLIED INTERPERSONAL NEUROBIOLOGY

DYADIC MINDFULNESS 301 (a la AEDP)

Additions to Stance: Not Only PACE.....

- P** -- presence, playfulness is an emergent phenomenon in AEDP
- A** – attunement, acceptance, affirmation
- C** – compassion, care, curiosity
- E** – empathy

..... but also SUFIED

- S** – self-disclosure
- U** – undoing aloneness, being with and then some
- F** – fearless, though mindful, exploration of relational and transformational experience
- I** – make Implicit explicit
- E** – make the explicit experiential
- D** – dyadic exploration of all of the above

Additions to Objects of Mindfulness and especially Dyadic Mindfulness, which in AEDP we call Metatherapeutic Processing:

In AEDP, in addition to body, emotion, sensation, breath, we have some additional objects of mindful attention, especially dyadically mindful attention, which when experientially explored, constitutes its GEMs, and the fundamental AEDP method of GEM-to-GEM tracking

AEDP & its GEMs:

- Transformance
- Receptive affective experiences, especially as the constituents of the secure attachment we are seeking to co-construct , dyadically explored
- Dyadic/relational experiences
- Experiences of transformation

INTERPERSONAL NEUROBIOLOGY

Porges' Polyvagal Theory

The ANS in Emotion Regulation

NEUROCEPTION: Knowing without knowing

Without cortical involvement, neural circuits of the Autonomic Nervous System (the ANS) detect and distinguish whether situations or people are safe, dangerous, or life threatening.

THE POLYVAGAL THEORY describes three developmental stages in the organism's response to threat, each involving a different aspect of the ANS, and each activating different states of physiological arousal depending on the differential neuroception of life threat, danger, or safety. Each is characterized by markedly different capacities for social engagement, communication, and affect regulation.

➤ **Life Threat: Immobilization.** A set of reactions mediated by the old parasympathetic system, the unmyelinated dorsal branch of the vagus nerve, originating in an area of the brain stem known as the dorsal motor nucleus of the vagus. This is a state of hypoarousal, decreased heart rate and dissociated collapse.

➤ **Danger: Mobilization, The Fight-Flight Response --** A set of reactions mediated by the sympathetic branch of the ANS, the sympathetic nervous system (the SNS), associated with increasing metabolic activity and increasing cardiac output (e.g., faster heart rate, greater ability of the heart to contract). This is a state of hyperarousal, increased heart rate, and dysregulated rage, fear, panic.

➤ **Safety: Social Engagement --** A set of reactions mediated by the new parasympathetic system, especially the new myelinated branch of the vagus nerve, the ventral vagus which originates in an area of the brain stem known as the nucleus ambiguus. The myelinated vagus fosters calm behavioral states by inhibiting the influence of the sympathetic nervous system on the heart, and in addition to the heart and bronchi, regulates the cranial nerves of the face, ear, and head crucial to social engagement and communication. This is a state of optimal arousal, optimal for resting and digesting. Also maximally suited to social engagement, as eye contact, facial expression, vocalizations and their reception are all mediated by the ventral vagus.

INTERPERSONAL NEUROBIOLOGY

Porges' Polyvagal Theory:

The ANS in Emotion Regulation (cont'd)

Immobilization -- Life Threatening Situations

When the tone of these muscles is reduced, which occurs spontaneously in response to a neuroception of danger or a life threat in the external environment (e.g., a dangerous person or situation) or the internal environment (e.g., fever, pain, or physical illness):

- Feigning death, behavioral shutdown.
- The eyelids droop;
- The voice loses inflection;
- Positive facial expressions dwindle;
- Awareness of the sound of the human voice becomes less acute; and
- Sensitivity to others' social engagement behaviors decreases.

Mobilization -- Dangerous Situations

- Fight–flight behaviors.

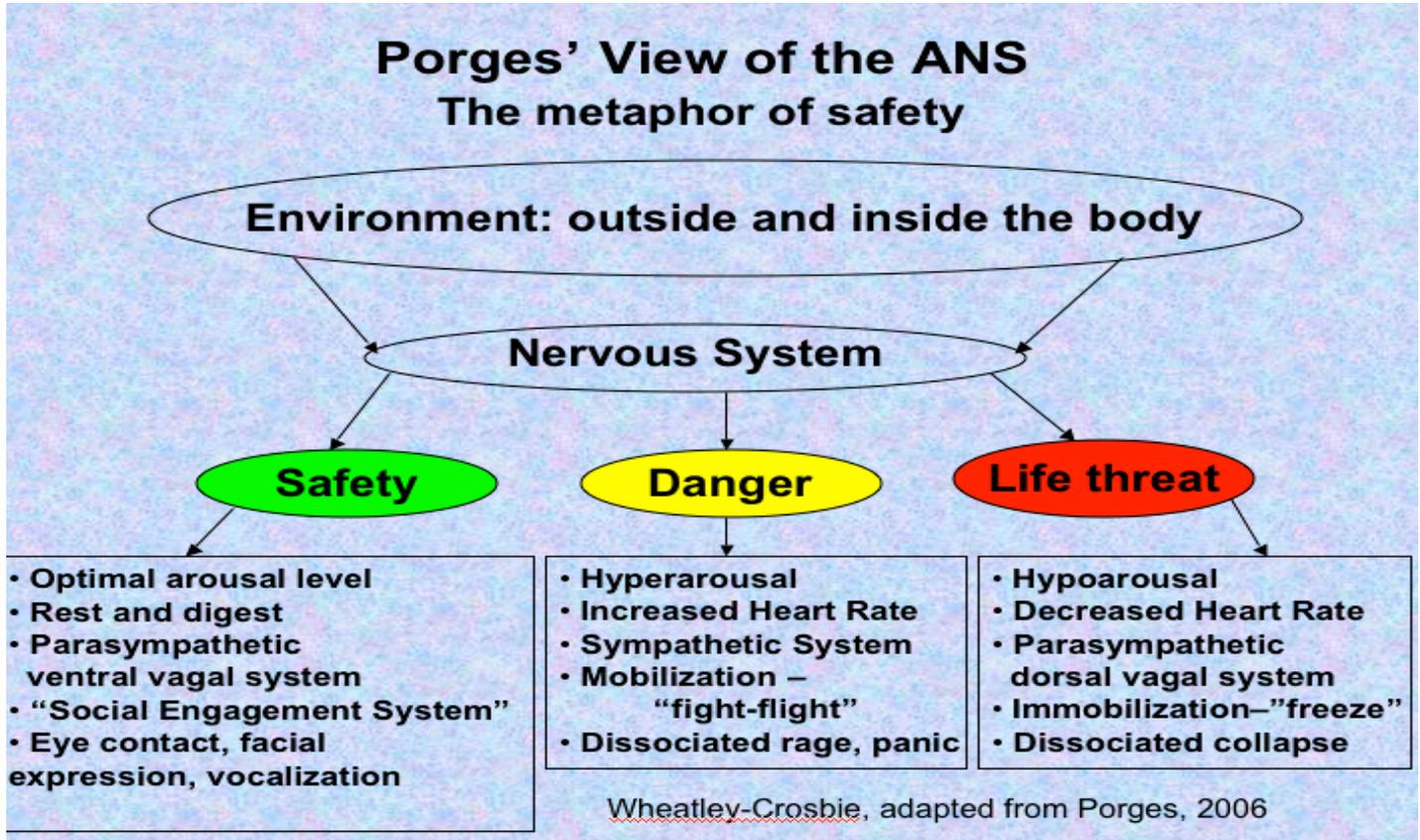
Social communication or social engagement -- Safe Situations

The neural regulation of the muscles of the face and head influences how someone perceives the engagement behaviors of others. More specifically, this neural regulation can reduce social distance by allowing humans (including infants) to:

- Make eye contact;
- Facial expression, vocalization, listening.
- Vocalize with an appealing inflection and rhythm;
- Display contingent facial expressions; and
- Modulate the middle-ear muscles to distinguish the human voice from background sounds more efficiently.

INTERPERSONAL NEUROBIOLOGY

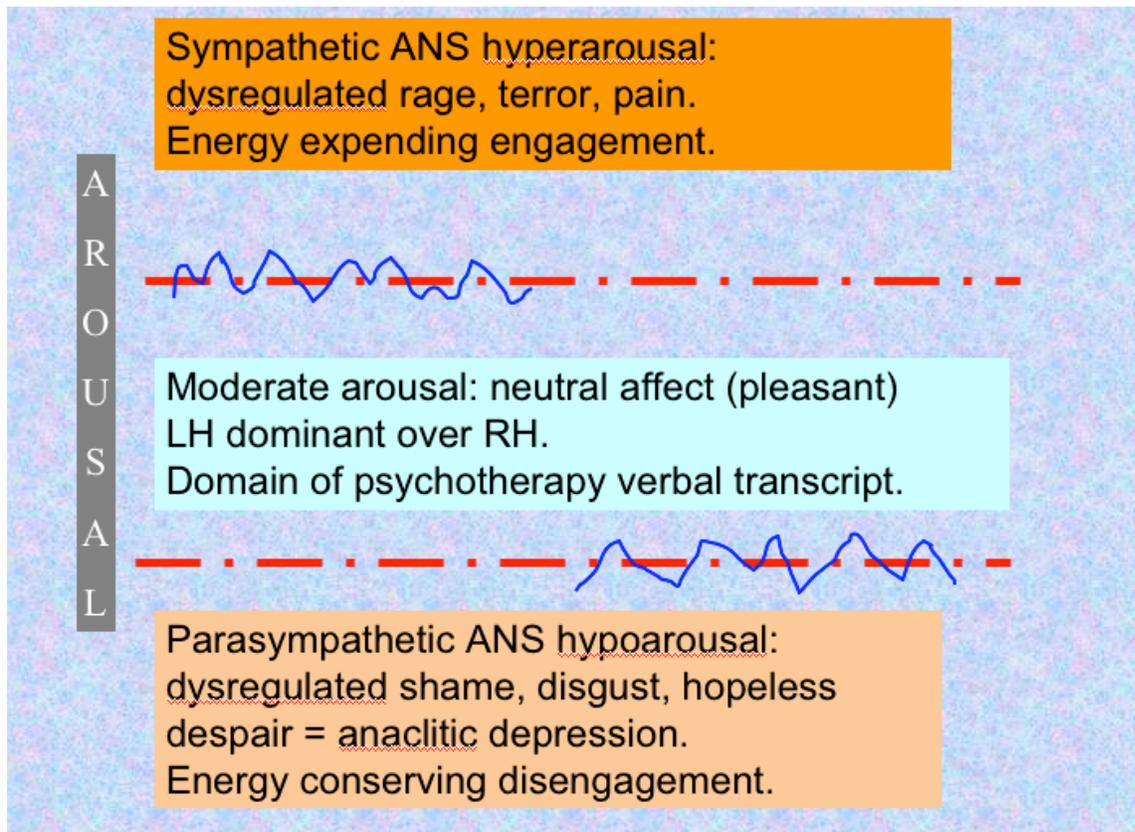
Porges' Polyvagal Theory: The ANS in Emotion Regulation (cont'd)



Porges' Polyvagal Model

- The sympathetic hyperarousal zone processes states of danger (fight/flight), while the dorsal vagal hypoarousal system is dominant in states of life survival-threat.
- The early development of these two stress-responsive psychobiological domains is directly impacted by dysregulated (abuse and neglect) attachment experiences.
- These right brain imprinted implicit memories of the hyperarousal and dissociative-hypoarousal responses to early relational trauma are re-activated in the patient-therapist relationship.

INTERPERSONAL NEUROBIOLOGY: The ANS In Emotion Regulation Working with the Window of Tolerance (Ogden, 2009)



INTERPERSONAL NEUROBIOLOGY

The Face/Heart Connection in Porges's Polyvagal Theory

- The Polyvagal Theory links the evolution of the autonomic nervous system to affective experience, emotional expression, facial gestures, vocal communication and contingent social behavior.
- The theory describes how, via evolution, a connection emerged in the brain between the nerves that control the heart and the face.
- This face-heart connection provided the structures for the “social engagement system” that links our bodily feelings with facial expression, vocal intonation, and gesture.
- The Polyvagal Theory provides a more informed understanding of the automatic reactions of our body to safety, danger and life threat.
- Compromises to the Social Engagement System are features of several psychiatric disorders and the body's natural response to abuse and trauma
- The link between the ANS and the insula: the lateralized functioning of the insula is intimately connected with the ANS (sympathetic – Right Insula connection; social engagement. new parasympathetic – Left Insula connection)
- Social engagement (and oxytocin) can suppress arousal, stress, depression, and cortisol release, whereas conversely, the latter factors can reduce mood, sociability, and immune function. Positive affect can suppress pain, whereas negative mood can exacerbate it
- In clinically depressed patients, stimulation of the left vagus nerve, which activates the left insula and often elicits subjective mood enhancement, produces de-activation in the right insula

PUTTING IT TOGETHER: Attachment, the Brain, the ANS, & the Cycle of Trauma

- Chronic misattunement between caregiver and child, and the resultant ongoing stress, leads to insecure or disorganized attachment, and dysregulation of the ANS (Porges, Ogden, Schore)
- Disorganized or insecure attachment predisposes the individual to trauma, i.e., being alone with, and overwhelmed by, unbearable affective experiences (Fosha; van der Kolk) and to ANS based psychophysiological disorders (Levine, Scaer)
- Trauma damages subcortical structures of the brain, further reinforcing a cycle of persistent and pernicious stress (van der Kolk), and dysregulates the ANS and the body

What the Inside Looks Like on the Outside

- PTSD
 - Intrusive, distressing thoughts and dreams
 - Sense of reliving trauma
 - Dissociative cuing from internal or external symbols of traumatic events
 - Persistent and pervasive avoidance
 - Restriction of affect
- Difficulty developing and being in close, intimate relationships
- Psychosomatic and physiological problems

What the Outside Looks Like to Heal the Inside

- This is not a solo act
The therapist must work with the patient to repair unbearable states of aloneness and foster secure attachment
 - Proactively engaged in creating safety
 - Emotionally engaged with reflective self function
 - "Go beyond mirroring" and actively help regulate difficult emotions.
- Defenses require responsiveness and compassion
 - Defenses result from attachment failures and lapses
- ANS psychobiological regulation through moment-to-moment tracking of experience, actively working to foster safety, and somatic techniques
- Deep affective experiences dyadically regulated and processed to completion

ATTACHMENT, EMOTION & AFFECTIVE NEUROSCIENCE: TREATMENT IMPLICATIONS

In the here-and-now of the patient-therapist relationship, promote healing-oriented, implicit procedural learning involving (i) the dyadic affect regulation of intense emotional states; (ii) access to body-based emotional experience; (iii) the metabolizing of stress-based states and return to positive states; and (iv) alternating between rounds of experience and reflection so as to promote integration.

EXPERIENTIAL ORIENTATION

- Bottom-up rather than top-down processing
- Procedural learning
- Work moment-to-moment
- Inextricable link between emotion and body-based experience
 - emotion-focused
 - visual, imagistic
 - body-focused
 - somato-sensori-motor experience

THERAPEUTIC AIMS

- Promote safety (nurture an attachment-based patient/therapist relationship – the relational work) so as to foster an expanded range of exploration (of the inner world – the deep experiential work)
- Promote the patient's experience of existing in the heart and mind of the therapist, so as to enhance the patient's reflective self function and thus enhance security of attachment, and resilience in the face of trauma
- Regulate fear and shame
- Help patient to not feel alone in the face of intense emotion

THERAPEUTIC STANCE: caring, sharing, helping, & delighting

- Emotionally present; caring, attuned
- Empathic, validating
- Affirming, appreciative, expressing of a positive stance toward the pt.
- Sensitive and responsive to emotional communication, especially distress
- Able and willing to go “beyond mirroring” and help
- Emotionally-engaged (“it takes two to tango;” emotional contagion)
- Affectively competent:
 - able to feel and deal while relating (the therapist's security of attachment and its transmission to the patient)
 - able to own caretaking lapses (self disclosure)
 - sincerity and self-possession

ATTACHMENT, EMOTION & AFFECTIVE NEUROSCIENCE: TREATMENT IMPLICATIONS (Cont'd)

THERAPEUTIC ACTIVITIES

DYADIC ENGAGEMENT

- Entrain dyadic emotional processes of mutual emotional engagement mediated by right brain to right brain communication and mirror neurons
 - psychobiological state attunement
 - empathy
 - affective resonance
 - gaze sharing – eye contact
 - mutually shared pleasure
 - affective engagement
 - play

INTENSE EMOTIONAL EXPERIENCE: DYADIC REGULATION

- Promote emotional modulation and capacity to metabolize high stress negative affects and regain mutual coordination of affective states, i.e., promote the capacity to rapidly metabolize negative affects and maximize positive affective states
- Help patient not be alone with intense emotional experiences
- Help regulate -- somatically and dyadically-- dysregulated experiences
- Process categorical emotions and work through to completion
 - Facilitate access to visceral experience
 - Explore concomitants of emotion: memories, fantasies
 - Process and complete emotion sequences
 - Promote the activation of adaptive action tendencies

METAPROCESSING & INTEGRATION

- Bottom-up & top-down processing
- Promote the development of the patient's experience of existing in the mind and heart of the other
- Affirm, process and reflect on the experience of the transformation of the self, in the context of a caring, affirming, collaborative relationship with an other
- Affirm and process the experience of the healing affects
 - Feeling moved and emotional within the self
 - Feeling gratitude and love toward the other
- Promote the development of compassion and self-compassion
- Promote and elaborate the development of a coherent and cohesive autobiographical narrative