

Understanding Polyvagal Theory

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The Central Nervous System Voluntary vs. Autonomic

- Voluntary is what's in your control (examples)
 - Talking
 - Walking/Running
 - Cooking
 - Reading
 - Dancing
 - Driving
 - Playing/Exercising

The Central Nervous System Voluntary vs. Autonomic

- Autonomic is what's NOT in your control and regulates our more primitive functioning (examples)
 - Heart Rate
 - Digestion and Peristalsis
 - Breathing
 - Metabolism
 - Immune responses
 - Face flushing
 - Pupil Dilation

Traditional autonomic nervous system

Autonomic

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graph TD
    A[Autonomic] --> B[Sympathetic (SNS)  
fight or flight]
    A --> C[Parasympathetic (PNS)  
rest and digest, calm]
    
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Work reciprocally, in balance!

Polyvagal Autonomic Nervous System

Autonomic

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graph TD
    A[Autonomic] --> B[Sympathetic (SNS)]
    A --> C[Parasympathetic]
    C --> D[Dorsal Vagal (PNS)  
STOP]
    C --> E[Ventral Vagal (SES)  
GO]
    
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Working sequentially!

Autonomic Nervous System Theories

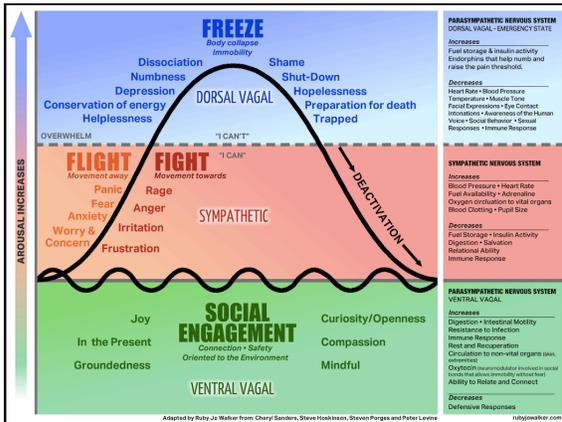
- Traditional: reciprocal
 - Sympathetic Nervous system (SNS)
 - Mobilization for fight/flight response
 - Parasympathetic Nervous system (PNS)
 - Rest and Digest, Calming system
- Polyvagal: sequential
 - Sympathetic Nervous System: Mobilization for fight/flight response
 - Ventral Vagal Parasympathetic: Rest, Digest and Calm; Social Engagement (GO)
 - Dorsal Vagal Parasympathetic: Immobilization (STOP)

Hierarchical system of Polyvagal theory

The traditional theory states that the sympathetic and parasympathetic systems are reciprocal and work in balance.

The polyvagal theory states that we respond to stressors in a hierarchical and sequential manner that regulate safety and threat.

Ventral Vagal PNS: Social engagement
 Sympathetic Nervous System: Mobilization of fight/flight responses
 Dorsal Vagal PNS: Immobility response



Ventral Vagal Parasympathetic Nervous System, aka Social Engagement system

- The ventral vagal parasympathetic system aka SES is the newest part of our autonomic nervous system
- Myelinated: insulates the nerve and allows for increased speed of messaging and "fosters calm behavioral states by inhibiting the influence of the sympathetic nervous system of the heart." (Porges, p.17)
- Linked to cranial nerves that control facial expression and vocalization - **social engagement**
- Developed in mammals out of a need to nurture their young, (unlike reptiles), and plays an important part in bonding
- This is our homeostasis, where we are happiest and healthiest and as Bioenergetic Therapists help our clients achieve this state.
- We can only be in this state when the nervous system detects a safe environment

Ventral Vagal Parasympathetic Nervous System, aka Social Engagement system

Social Indicators:

- Eye contact
- Voice contact
- Feeling of sympathy
- Sensation of the face, mandible, lips & mouth, throat, warmth, tingling in facial areas
- Interpersonal awareness arises. Sense of interpersonal contact via eyes, ears, mouth, arms
- Upward sensations
- Neurotransmitters: Oxytocin, Vasopressin

Taken from John Chitty, www.energieschool.com

Sympathetic Nervous System

- This system is in both mammals and reptiles
- Initiated as a defensive movement when our nervous system detects danger in our environment
- Allows for mobilization of fight or flight response and behaviors
- Although fight and flight responses are in different parts of the brain, they each create similar bodily responses such as increased heart rate, increased respiration, etc.
- The flight response is movement away from the threat
- The fight response is movement toward the threat in an attempt to remove it

Sympathetic Nervous System

Sympathetic Indicators:

- Faster respiration
- Quicker heart rate (pulse)
- Pupils dilate
- Pale skin color
- Increased sweating
- Skin cold (possibly clammy)
- Digestion and peristalsis decreases
- Activates during positive or negative stress states, including sexual climax, rage, desperation, terror, anxiety/panic, trauma
- Neurotransmitters: Cortisol (CRF), Adrenaline, Epinephrine, Noradrenaline & Norepinephrine

From (Babette Rothchild, p. 48)

Creating Safety

The ventral vagal system can only be accessed when the nervous system senses a safe environment.

Safety is created in the following ways:

- Making eye contact
- Using pleasant facial expressions
- Ability to hear a soothing (prosodic) human voice
- Familiar people and surroundings (therapist's office is a secure and quiet space)
- Developing relationships

Lack of safety

Lack of safety is created by some of the following:

- Therapist's office is too noisy, makes it difficult to hear the therapist's voice
- Lack of eye contact
- Too direct eye contact (staring)
- Flat affect
- Negative facial expressions
- Voice loses inflection or voice is too loud
- Sudden change in therapist's voice



Neuroception



- A subconscious system for detecting **Threats** and **Safety** at a glance.
- Neural circuits distinguish whether situations are safe, dangerous, or life threatening.
- IS THAT A SNAKE OR A STICK IN THE ROAD?
- Faulty neuroception: inability to inhibit defense in safe environment and/or activate defense in risky environment
- The neuroception of danger or threat to life can occur in response to the external environment (person or dangerous environment) or the internal environment (pain, physical illness)

Vincenza Schroeter, CBT

Perception is influenced by a sense of safety

When our nervous system does not sense safety it will evaluate anything that may be neutral as dangerous.

Once our nervous system calms and returns to homeostasis, neutral sights and sounds are seen as neutral and engagement occurs.

When our nervous system is in the ventral vagal state, then the nervous system of others feel safer.

It is important that the therapist is in their ventral vagal state. If the therapist is in a defended state then the client may detect the therapist as "unsafe". It is important for the therapist to be grounded before beginning a session.

Implications for Clinicians

- The overall therapeutic goal is to re-establish SES, "reclaim a natural, childlike state of joy..." (Alexander Lowen)
- Therapist can identify the state of the ANS by observation of the body and interpersonal reactions....(SNS, PNS, or SES)
- With the understanding of the polyvagal nervous system we can use interventions to help move energy from one state to another: To up (SES, SNS) or down regulate to (SES, PNS) activate deep breathing. Deep breathing activates the brain/body communication.
- Vagus nerve and heart communicate with the brain.
- Notice where energy is stuck and activate emotional expression to move blocked affect.
- Be aware of your voice prosody and affect to encourage safety.
- Once affect moves through, the client will naturally move to SES

Implications for Clinicians

- By creating safety we can help clients move from the ventral vagal state to the dorsal vagal state without fear, clients may express feelings of relieve and even euphoria.
- When a client drops into the dorsal vagal parasympathetic state (panic, dissociation) the therapist can move the client into the prefrontal cortex in the here and now by having them count doors, check their watch for the time, tell therapist the color of their clothing thereby moving them into Social Engagement system.
- Have the client put the palm of their hand on the back of their neck. This has a calming effect.
- DUI test, touch the thumb to each finger on same hand, count 1234 and back again

References

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