

Engaging the Rhythm of Regulation  
A Polyvagal Theory Guided Approach to Therapy

MHASO Events  
April 15-16, 2021

Deb Dana, LCSW  
rhythmofregulation.com  
polyvagalinstitute.org

**Traumatic Stress Research Consortium  
in the Kinsey Institute at Indiana University**

*Directed by Stephen Porges, PhD*

The Consortium is researching the experiences of trauma survivors and the clinicians who work with them, and the disruptive impact of trauma on the autonomic nervous system with the goal of identifying improved treatment options.

If you are interested in joining the Traumatic Stress Research Consortium as a participating clinician and becoming a part of this important research project, please email:

[trauma@indiana.edu](mailto:trauma@indiana.edu)

With gratitude to Stephen Porges for his  
creation of Polyvagal Theory...

Polyvagal Theory

The science of connection...

The science of feeling safe enough to fall in love with life  
and take the risks of living...



copyright Deb Dana, LCSW 2021

*The autonomic nervous system is at the heart of daily living shaping our experiences of safety and impacting our ability for connection.*

copyright Deb Dana, LCSW 2021

## The Autonomic Impact of Trauma

Trauma sidetracks the development of autonomic regulation.

Traumatic experiences interrupt opportunities to exercise the neural circuitry of connection.

Trauma replaces patterns of connection with patterns of protection.

Adaptive survival responses replace social engagement.

Co-regulation is unavailable/dangerous.

Self-regulation is ineffective/inadequate.

copyright Deb Dana, LCSW 2021

## A flexible autonomic nervous system...

Reduced inflammation, control of immune response

Lower risk of stroke, heart disease, diabetes

Emotional regulation

Increased capacity for friendship and connection

Resilience

Compassion

copyright Deb Dana, LCSW 2021

## A rigid autonomic nervous system...

Impaired immune functioning, Inflammatory diseases

Digestive problems

Respiratory problems

Chronic fatigue

Depression

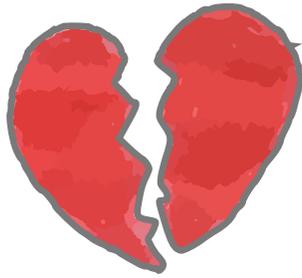
Anxiety

Social isolation/loneliness

copyright Deb Dana, LCSW 2021

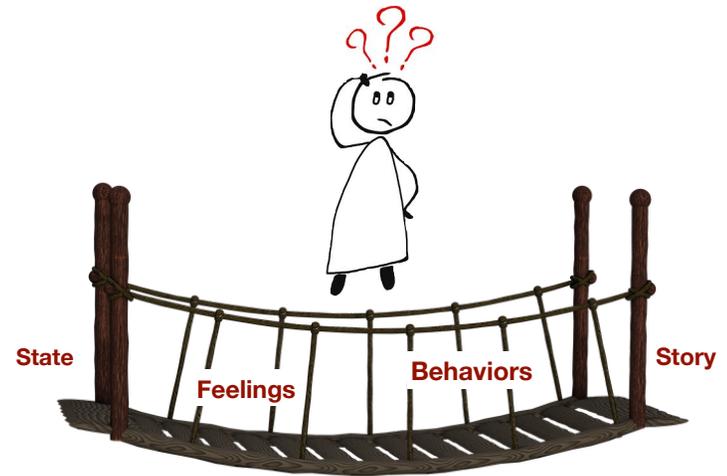
*"Trauma is a chronic disruption of connectedness."*

*(Stephen Porges)*



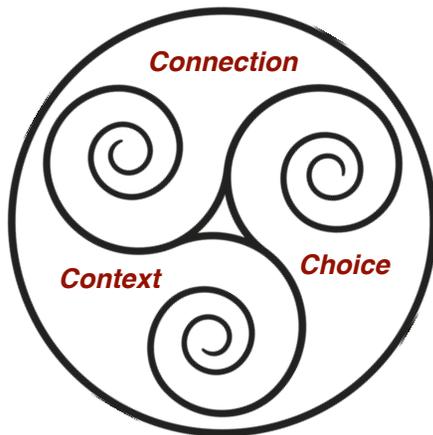
Trauma stories are carried in states of autonomic dysregulation.

copyright Deb Dana, LCSW 2021



copyright Deb Dana, LCSW 2021

### Three Essential Elements



copyright Deb Dana, LCSW 2021

### Organizing Principles of Polyvagal Theory

1. Neuroception - detection without awareness
2. Hierarchy - three predictable pathways of response
  - Ventral Vagal
  - Sympathetic Nervous System
  - Dorsal Vagal
3. Co-regulation - a biological imperative

copyright Deb Dana, LCSW 2021

## Neuroception Detection without Awareness

This intent listening happens below the thinking parts of our brain and away from our conscious control.

The autonomic nervous system responds to cues from:

- **inside** our bodies
- **outside** in environment around us
- in the relationships **between** us and others

copyright Deb Dana, LCSW 2021

Our responsibility is to tune into what happens in our own nervous system...

...and be curious about what is happening in another nervous system.

copyright Deb Dana, LCSW 2021

## When there is a neuroceptive match...

...neuroception is a fit for the situation and the autonomic state will bring the energy necessary to effectively manage the experience.



copyright Deb Dana, LCSW 2021

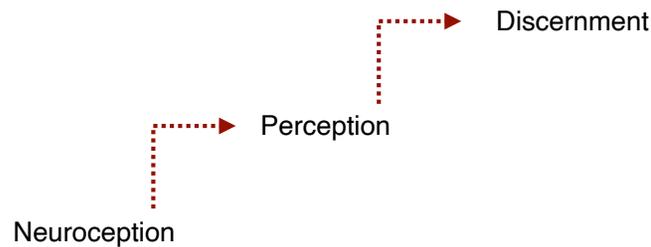
## With a neuroceptive mismatch...

*Inability to calm defense systems in safe environments*  
Autonomic nervous system activates a habitual protective response pattern — hypervigilant - alarmed



*Inability to activate defense systems in risk environments*  
Neuroception does not signal danger when there is actual danger; autonomic response is inadequate to manage the situation — dulled, unaware or high risk-taking

copyright Deb Dana, LCSW 2021



In this moment, in this place, with this person/people,  
is this response, or level of response, needed?

copyright Deb Dana, LCSW 2021

Neuroception of danger activates threat related gene expression.

“...increasing evidence that changes in the expression of literally hundreds of genes can occur as a function of the physical and social environments we inhabit. Moreover, it appears as though these effects are often more strongly tied to peoples’ subjective experience of their surrounding social environment than to objective features of those environments.” (Cole)

<https://www.youtube.com/watch?v=C62IDmGKZzg>

copyright Deb Dana, LCSW 2021

Neuroception exerts a powerful influence over our physiology.

Cells are in a continual state of regeneration.

“...our physiological state on any given day can influence our molecular make-up for weeks and months into the future.” (Slavich and Cole)

copyright Deb Dana, LCSW 2021

## Active and Passive Pathways

Passive Pathways:

Neuroception is monitoring *inside*, *outside*, and *between* (body, environment, relationships)

Active Pathways:

actions to consciously influence autonomic state, therapy models, processes, procedures

Regulation of passive pathways is necessary to support work with active pathways.

copyright Deb Dana, LCSW 2021

In this moment does your neuroception sense me  
as a resource or a threat?

What are the cues of safety?  
What are the cues of danger?

- embodied
- environmental
- relational



copyright Deb Dana, LCSW 2021

## The Both/And of Autonomic Safety

Being safer does not necessarily make us feel safer.

Many of our social systems are focused on features of danger and yet we have a profound sensitivity to features of safety and exposure to these can foster resilience. (Porges)

It is not just the reduction or resolution of cues of danger but also the active experiencing of cues of safety that our autonomic nervous system needs.

copyright Deb Dana, LCSW 2021

A healing environment is a safe environment.

&

A safe environment is a healing environment.



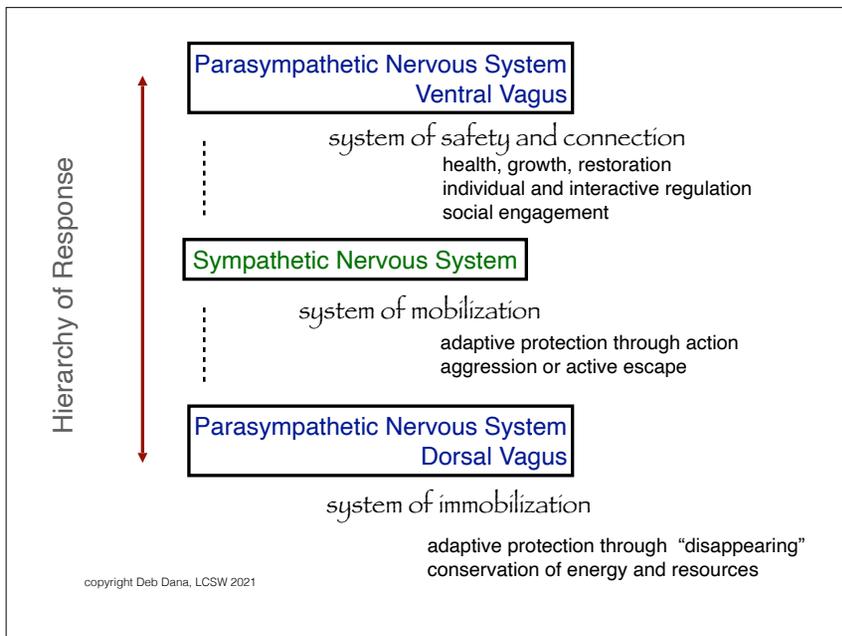
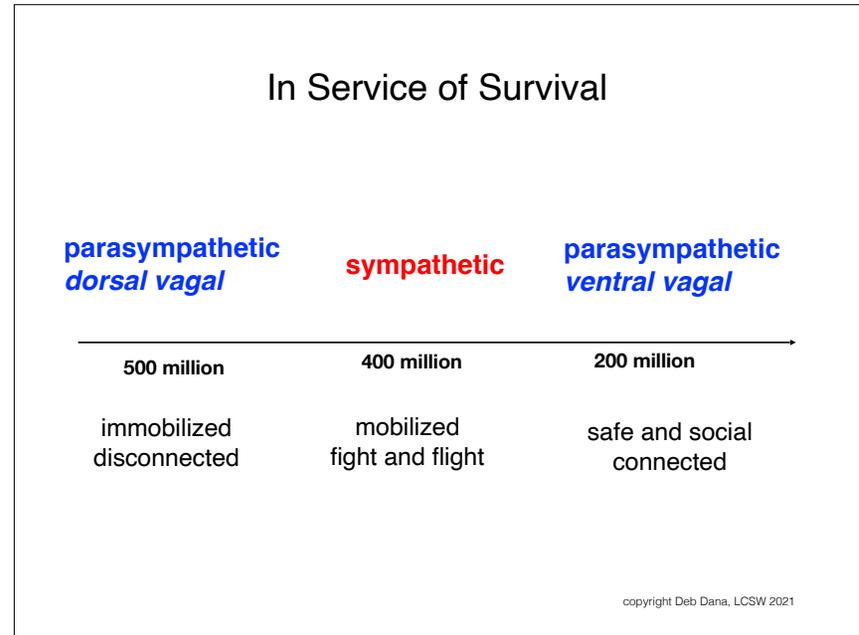
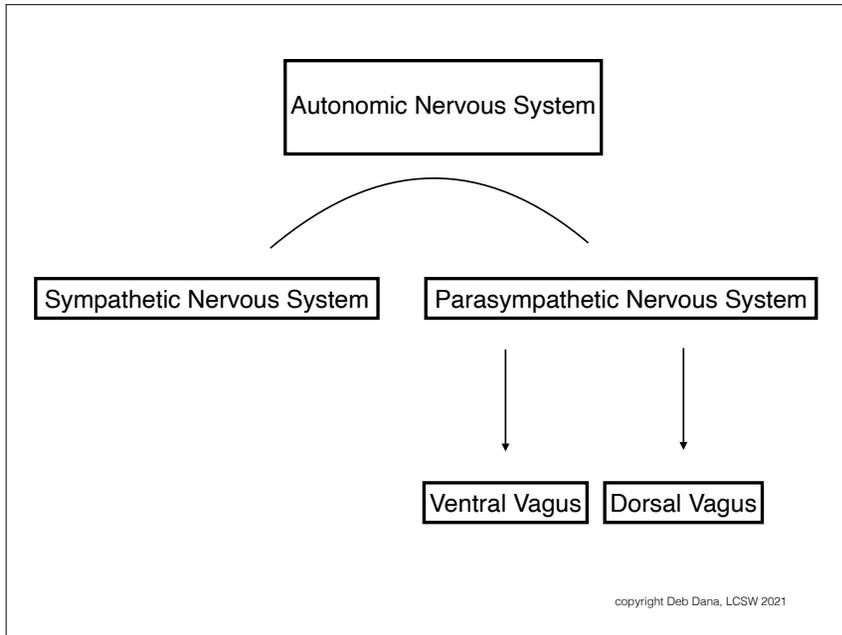
Create a story of safety by listening to the nervous system...

copyright Deb Dana, LCSW 2021

## The Autonomic Hierarchy

*We are all travelers on the predictable pathways of the autonomic hierarchy...*

copyright Deb Dana, LCSW 2021



### The Parasympathetic Branch The Vagus Nerve the "wanderer"

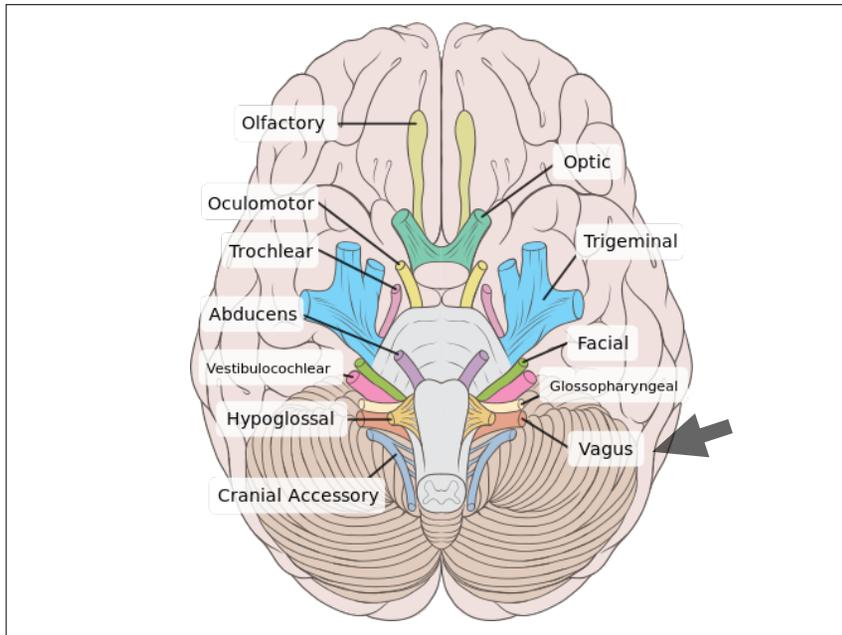
From the brain stem at the base of the head (medulla), the vagus travels down through the lungs, heart, diaphragm, and stomach... and upward connecting with nerves in the neck, throat, eyes, and ears...

...to form the "face-heart" connection

An anatomical drawing of the human nervous system, showing the brain, spinal cord, and peripheral nerves. The vagus nerve is highlighted in blue, showing its path from the brainstem down through the chest and abdomen, and its connections to various organs.

Wellcome Library London

copyright Deb Dana, LCSW 2021



## The Vagus

### 10th Cranial Nerve

Longest of the twelve cranial nerves

Communicates bi-directionally between the body and the brain

Mixed nerve - 80% sensory (afferent) and 20% motor (efferent)

The two extremes of response - oldest immobilization and newest social connection

copyright Deb Dana, LCSW 2021

**Ventral Vagus (supradiaphragmatic)**  
creates healthy homeostasis

safe and engaged connect, communicate

**divided at the diaphragm**

**Dorsal Vagus (subdiaphragmatic)**

daily function: healthy regulation of the digestive system

survival response: move out of awareness, out of connection, into collapse

copyright Deb Dana, LCSW 2021

## The Sympathetic Nervous System

Middle part of the spinal cord (thoracic and lumbar)

regulates breath and heart rhythms

mobilizing energy

fight and flight

Hypothalamus  
Pituitary gland  
Adrenal cortex

copyright Deb Dana, LCSW 2021

## Emergent Properties

From a state of protection, (mobilization or disconnection) survival is the only goal. Adaptive survival responses close the system to connection and to change.

From a state of connection, (social engagement) health, growth, and restoration are possible.

copyright Deb Dana, LCSW 2021

Our biology supports or restricts access to body sensations, thoughts, feelings, behaviors, beliefs.

The emergent properties of each state are only available when we are in that state.

When we move from state to state, we gain and lose access.

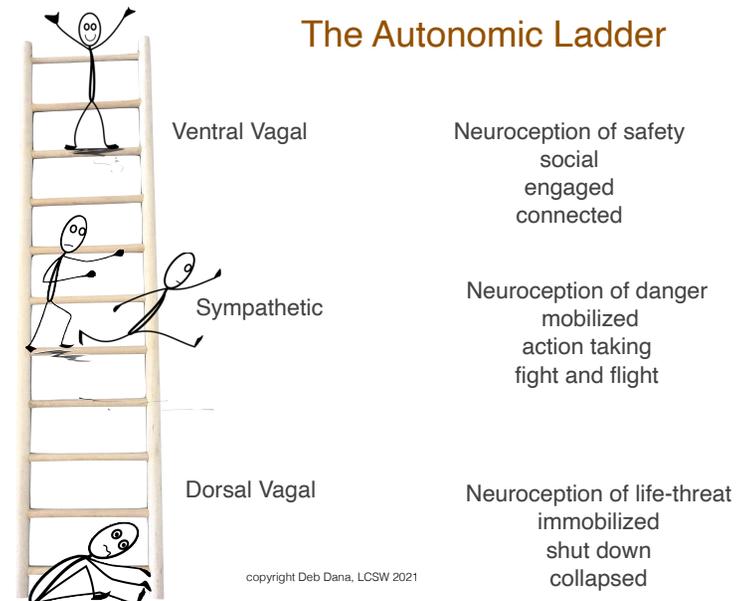
This is not a cognitive choice. It is a biological one.

copyright Deb Dana, LCSW 2021



From Survival to Safety

## The Autonomic Ladder



## In the beginning...the Dorsal Vagus

Oldest pathway of response  
Immobilized with fear  
Scared to death

*"One feels as if one were lying bound hand and foot at the bottom of a deep dark well, utterly helpless." Van Gogh*



copyright Deb Dana, LCSW 2021

## Emergent Properties of a Dorsal State...



body enters conservation mode  
numb, foggy  
collapsed  
disconnected, untethered, floating  
alone, lost, abandoned, unreachable  
hopeless  
disappear  
safety and hope feel unreachable  
the path of last resort  
scared to death  
...a story of despair

copyright Deb Dana, LCSW 2021

## Moving out of Safety into a Mobilized Sympathetic Nervous System

Evolutionarily we are not safe when we are separated from the group.

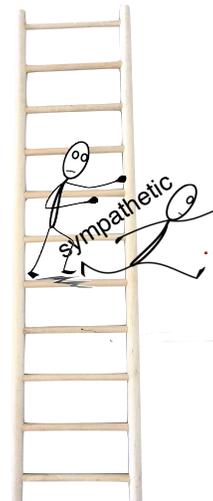
Moving out of safety on an autonomic level brings a sense of being cut off from others.



*Fear is whispering to me  
And I feel the power  
of its message  
Move, take action, escape  
No one can be trusted  
No place is safe...*

copyright Deb Dana, LCSW 2021

## Emergent Properties of a Sympathetic State



sense of unease and impending danger  
mobilization of fight and flight  
active aggression or escape  
alarmed, hypervigilant

...a story of an unsafe world and unsafe people

looking and listening for danger  
miss and misread signs of safety  
sense of separation - cut off from others  
disconnected from self, others, world, spirit

copyright Deb Dana, LCSW 2021

## Ventral Vagus

Safely Connected

What would it feel like  
To be safe and warm  
Arms strong but gentle  
Snuggled close  
Joined by tears and laughter  
Free to share, to stay, to leave...



copyright Deb Dana, LCSW 2021

## Emergent Properties of a Ventral Vagal State

...a story of possibility



co-regulate and self-regulate  
connect to self, others, the world, spirit  
tune into the moment and tune out distraction  
resourced and resourceful  
reach out for, and offer, support  
compassion, self-compassion  
flexible, resilient  
explore options  
hope

copyright Deb Dana, LCSW 2021

Life on the Ladder



copyright Deb Dana, LCSW 2021

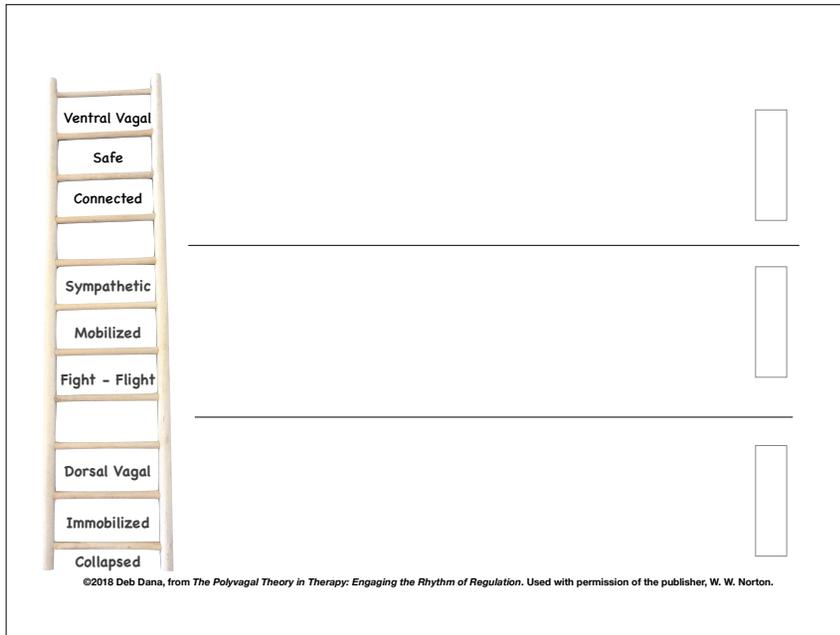
## The Personal Profile Map *Where Am I?*

Identify → Interrupt

State → Regulating Resource

Shared Language → Shared Understanding

copyright Deb Dana, LCSW 2021



## The Essential Notice and Name Skill

Engage with a state not just be engaged by it...

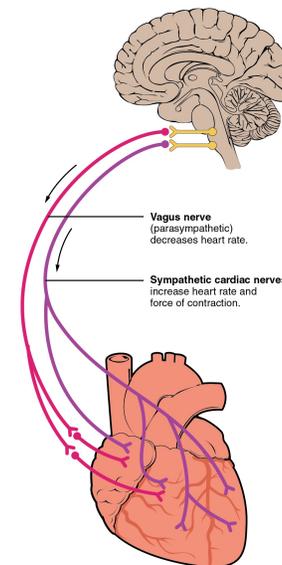
1. Notice where you are on the autonomic map.
2. Name the state.
3. Turn toward your experience.
4. Bring curiosity.
5. Listen for a moment to the story of your state.

copyright Deb Dana, LCSW 2021

## The Vagal Brake

- is a ventral vagal circuit to the heart's pacemaker that speeds up and slows down the heart
- keeps the ventral vagal system online and in charge while allowing in more sympathetic energy without activation of the HPA axis
- creates the ability for flexibility of response — to respond and not automatically react
- supports smooth transitions

copyright Deb Dana, LCSW 2021



Download for free at <http://cnx.org/contents/14fb4ad7-39a1-4eee-ab6e-3ef2482e3e22@6.27>.

## A System of Regulation through Relaxation and Re-engagement

The vagal brake:

- allows us to rapidly engage and disengage
- to quickly energize and calm
- brings a sense of ease to transitions

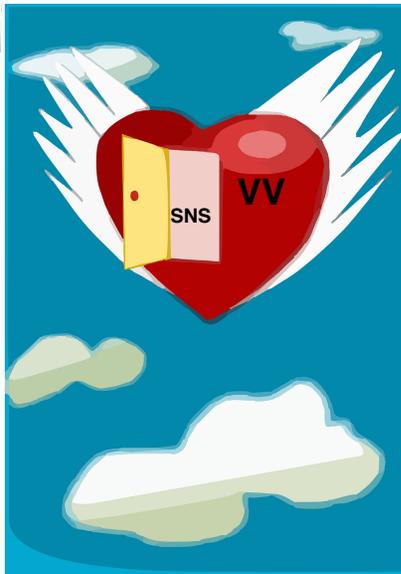
When the opportunity to exercise the vagal brake is a missing experience, the ability to move between states is impacted.

copyright Deb Dana, LCSW 2021

## Vagal Brake and Breath

- with every inhalation the vagal brake releases a bit and your heart rate speeds up
- with every exhalation it re-engages and your heart rate slows down

copyright Deb Dana, LCSW 2021



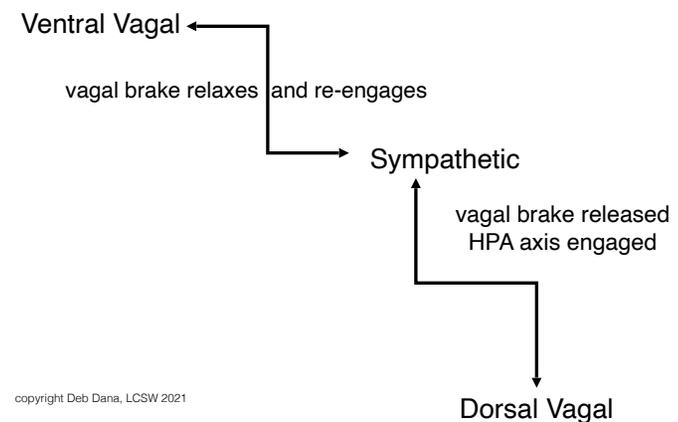
Step into the energy of your sympathetic system from an anchor in ventral.

Open and close the doorway to activation.

- brakes on a bicycle
- water faucet
- dimmer switch
- volume control knob
- bridge
- ???

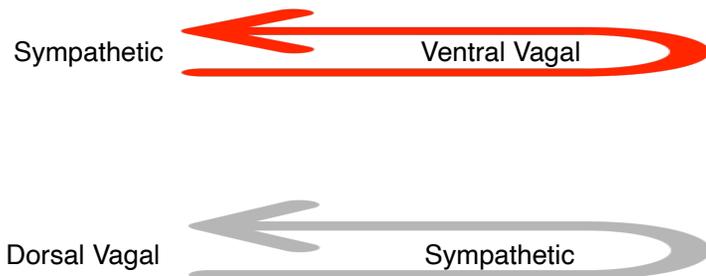
copyright Deb Dana, LCSW 2021

## Hierarchy in Action



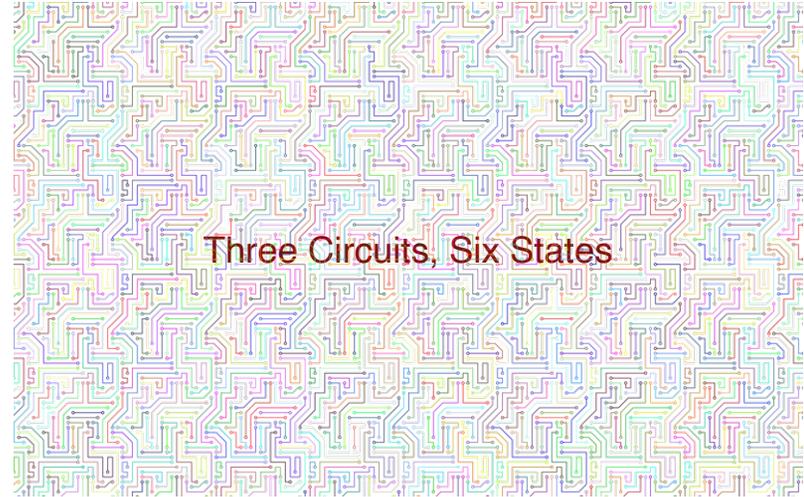
copyright Deb Dana, LCSW 2021

## Autonomic Loops



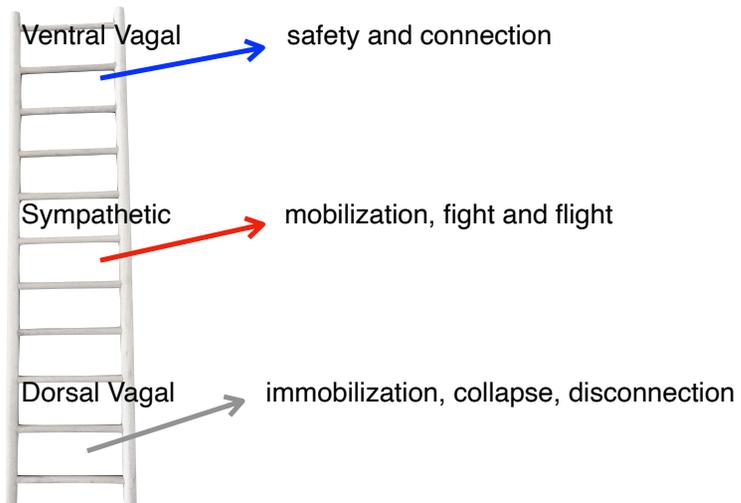
copyright Deb Dana, LCSW 2021

## Three Circuits, Six States



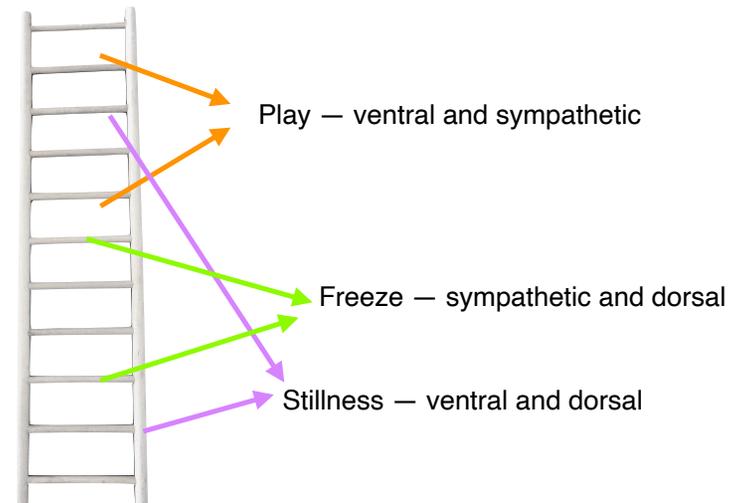
copyright Deb Dana, LCSW 2021

## Three Discrete States



copyright Deb Dana, LCSW 2021

## Three Blended States



copyright Deb Dana, LCSW 2021

## What is your experience of Play?

Play is meant to be a ventral vagal toning experience. For many clients rather than a ventral vagal inspired happy anticipation, opportunities for play bring the dysregulating energies of survival response.

Play is...

copyright Deb Dana, LCSW 2021

## Stillness

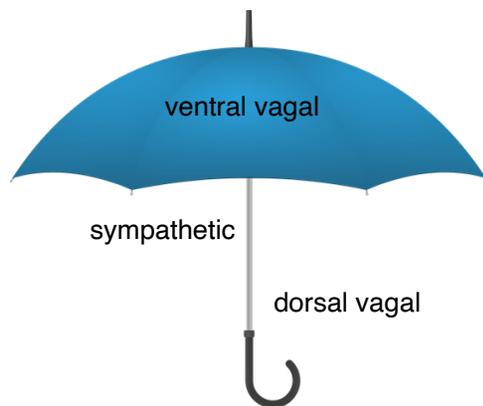
Stillness is a complicated autonomic experience.

How do we move into a moment of feeling safety still without activating survival states?

Stillness is...

copyright Deb Dana, LCSW 2021

## Ventral Vagal Energy is the Active Ingredient



copyright Deb Dana, LCSW 2021

Without a critical mass of ventral in our system, we are pulled into “conservation” and “activation” as we try to find regulation.



copyright Deb Dana, LCSW 2021

## Without a Ventral Vagal Anchor

An autonomic system that is missing the regulating influence of the ventral vagus...

brings health challenges  
creates distress in relationships  
shapes a daily experience of suffering

copyright Deb Dana, LCSW 2021

## Finding Ventral Vagal Anchors

1. Identify the predictable *who, what, where, and when* of the ventral vagal system.
2. Create a practice of turning to these when looking for a resource.
3. Use them to deepen a ventral vagal state.

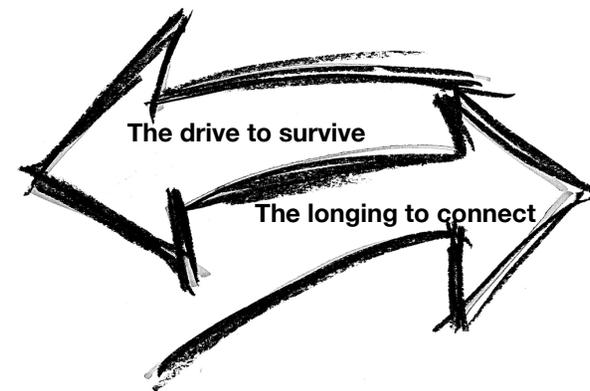
copyright Deb Dana, LCSW 2021

## Organizing Principle: Co-Regulation

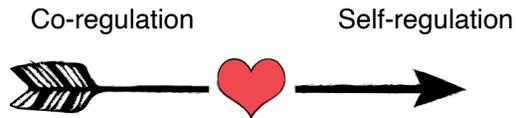


copyright Deb Dana, LCSW 2021

## Is it safe to connect?



copyright Deb Dana, LCSW 2021



Co-regulation is the foundation for building self-regulation.

With enough experiences of safe co-regulation we are able to weather the times when co-regulation is unavailable...

copyright Deb Dana, LCSW 2021

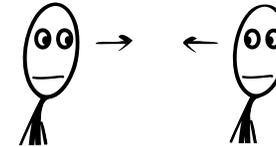
## The autonomic nervous system is shaped and regulated through interactions with others.

The autonomic nervous system *SENDS* and *SEARCHES FOR* cues of safety or danger

The cues sent from one system to another either:

co-regulate and create new possibilities

reinforce habitual response patterns and increase reactivity



copyright Deb Dana, LCSW 2021

Co-regulation is a necessary prerequisite for self-regulation. If we miss co-regulating opportunities in childhood, we feel the loss in our adult relationships.



Our clients' autonomic nervous systems have often been shaped away from connection toward protection.

copyright Deb Dana, LCSW 2021

*"...without the experience of an organizing other...the nervous system is stunned." (Sebern Fisher)*

In our work, we are responsible for being the regulated and regulating other. If we are dysregulated, there will be a rupture in attunement and our client's autonomic response will be an automatic move out of connection into protection.

**What message is your autonomic nervous system sending?**

copyright Deb Dana, LCSW 2021

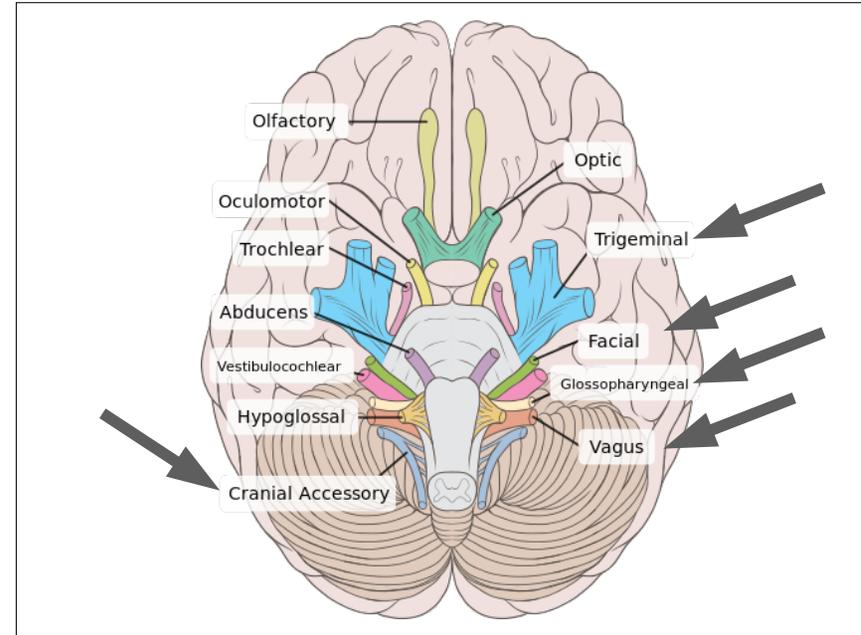
## The Social Engagement System

Formed through the evolutionary integration of Cranial Nerves V (trigeminal), VII (facial), IX (glossopharyngeal), X (vagus), XI (spinal accessory)

Controls:

- Facial expression (emotional expression)
- Eyelids (social gaze)
- Middle ear (hear human voice)
- Mastication (ingestion, sucking)
- Larynx, pharynx (vocalizing, swallowing, breathing)
- Head turn and tilt (social gesture, orienting)

copyright Deb Dana, LCSW 2021



## The Social Engagement System

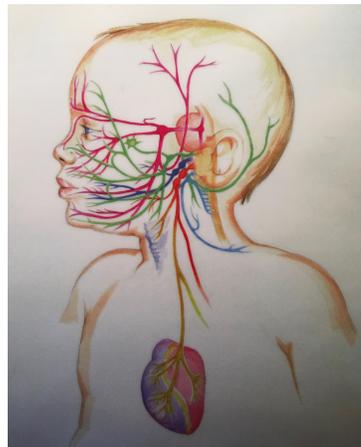
Five cranial nerves joined in the search for connection through our...

eyes

ears

voice

face and head movements



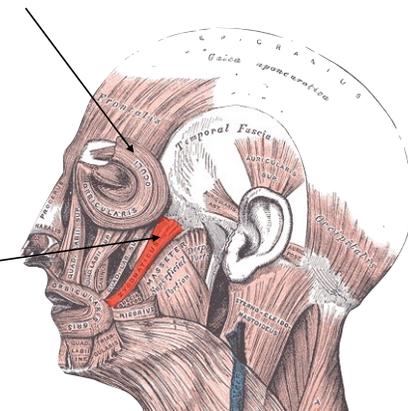
copyright Deb Dana, LCSW 2021

Used with permission: copyright Kate White [ppncenter.com](http://ppncenter.com)

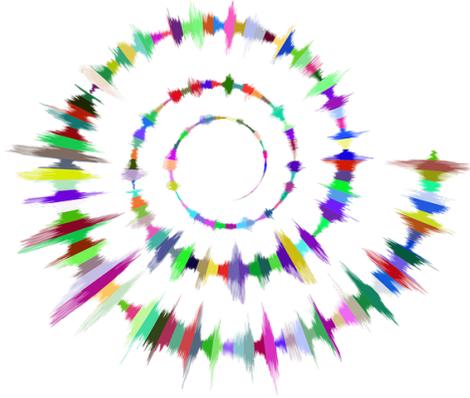
Moving in and out of eye contact is a regulating action.

We use the eyes (orbicularis oculi) to sense safety and signal safety.

*"...the zygomatic major can be willed into action, but only the sweet emotions of the soul force the orbicularis oculi to contract." Duchenne*



Gray's Anatomy of the Human Body 1918



The ear collects the spiraling energy from the cosmos... Anonymous Tibetan Medical Doctor

## The Power of Prosody

- The music of the voice
- Patterns of rhythm and sound
- Frequency
- Duration
- Intensity
- Reveals the underlying intent

Intonation before Information

copyright Deb Dana, LCSW 2021

## Connection through Vocal Bursts

*When you don't know what to say...use a vocal burst.*

“non-language sounds” we use to communicate

ahhh, mmmm, ohhhh, humph

understood across cultures

understood across species

understood with a high degree of accuracy

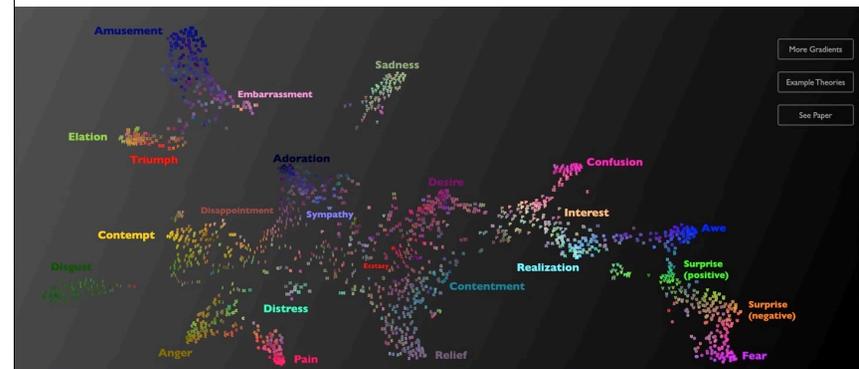
What is the autonomic message you are sending?

copyright Deb Dana, LCSW 2021

## The Sounds of Vocal Bursts

Interactive Vocal Burst Worldwide Map

- <https://s3-us-west-1.amazonaws.com/vocs/map.html#>



## Head Movement

A straight, unmoving head is an autonomic cue of danger.

A slight tilt to the head broadcasts a cue of safety and an autonomic welcome.

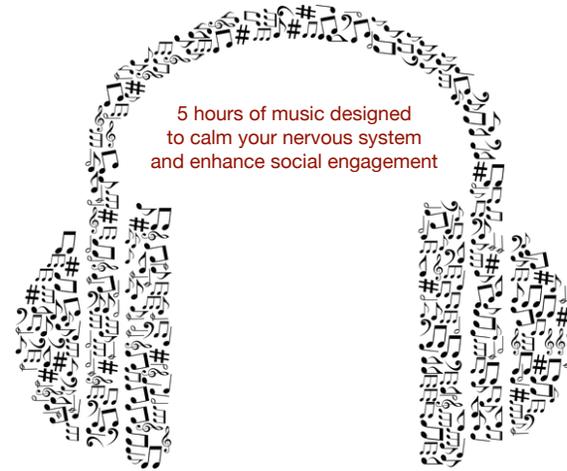
Head nods send a message of connection.



copyright Deb Dana, LCSW 2021

## SSP — an Auditory Intervention

5 hours of music designed  
to calm your nervous system  
and enhance social engagement



copyright Deb Dana, LCSW 2021

- Listening is dependent on and influences autonomic state
- Listening provides opportunities to exercise neural circuits that support physical and mental health
- The altered music used in SSP has the capacity to efficiently convey cues of safety to the nervous system

for more information: <https://integratedlistening.com/ssp-safe-sound-protocol/>

training discount code: RoR50

copyright Deb Dana, LCSW 2021

## Explore the Social Engagement System

- Share your soundscapes and the sound marks that bring your three states to life.
- Experiment with prosody and vocal bursts.
- Send warnings and welcomes through moving/rigid heads.

copyright Deb Dana, LCSW 2021

## Experiment with the Power of Eyes

**Stare** (strong, focused, a hint of a glare, you might feel your eyes moving outward from their sockets)

**Look** (neutral, less strongly focused, you might feel your eyes settling back into their sockets)

**Gaze** (soft, warm, you can feel your eyes deeply resting in their sockets)

Both as a sender and a receiver:  
Track your ANS response to each.  
What is your neuroception?

copyright Deb Dana, LCSW 2021

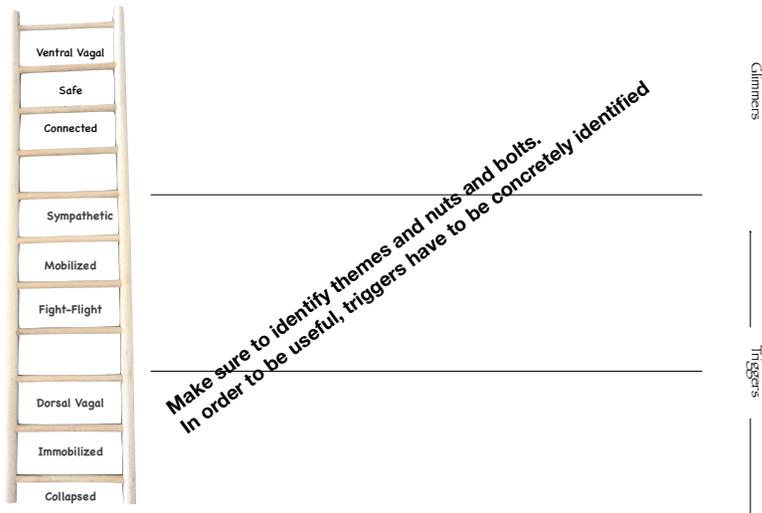
## Triggers and Glimmers

*How did I get here?*

- What activates each autonomic state?
- Our evolutionary negativity bias tries to answer the critical question, “Do we approach or avoid?”
- We react more intensely, more easily, and more quickly to negative events/experiences than equally strong positive ones.
- We need to help clients identify both their sensitivities and their strengths.

copyright Deb Dana, LCSW 2021

### Triggers and Glimmers Map



©2018 Deb Dana, from *The Polyvagal Theory in Therapy: Engaging the Rhythm of Regulation*. Used with permission of the publisher, W. W. Norton.

## The Autonomic Benefits of the Natural World



*“Earth will be safe  
when we feel in us enough safety.”  
Thich Nhat Hanh*

## SIFTing a Ventral Vagal Moment

SIFTing is an exercise bringing Ventral Vagal elements of sensation, image, feeling, and thought together, thoroughly mixing, and creating a resource that can be returned to as desired.

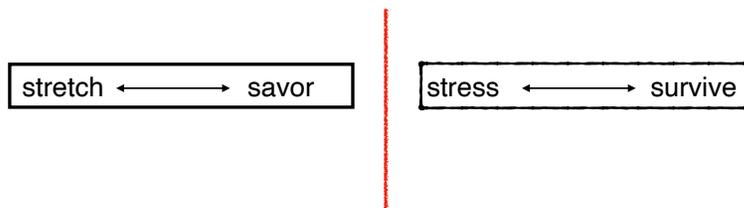
SIFTing uses an already embodied moment, a moment the client has already experienced but perhaps not fully celebrated.

SIFTing is a way to stop in a Ventral Vagal moment, bring it into awareness, and create a resource.

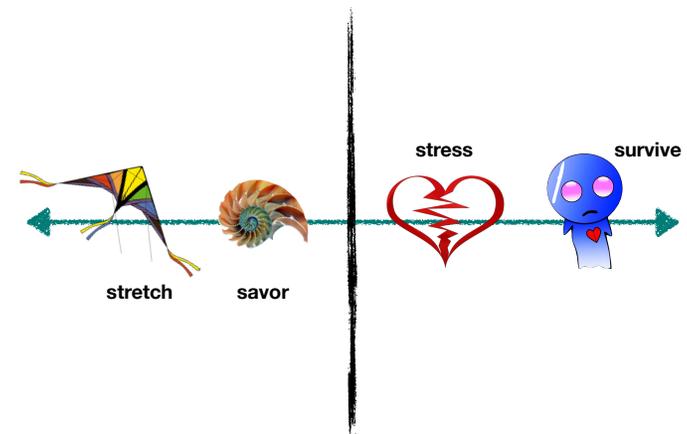
Clients can create many SIFTs over the course of therapy.

copyright Deb Dana, LCSW 2021

## The Right Degree of Challenge



copyright Deb Dana, LCSW 2021



copyright Deb Dana, LCSW 2021

## The Safety/Danger Equation

Cues of safety outweigh the cues of danger  
 ready for connection  
 new stories emerge  
 change is possible  
 physical and psychological well-being



Cues of danger outweigh the cues of safety  
 survival responses activate  
 stuck in a story  
 closed to change  
 disease and dis-ease

copyright Deb Dana, LCSW 2021

## Cues of Safety

The cues of safety have to outweigh the cues of danger

## Cues of Danger

Look for cues of safety and danger in the categories of:

embodied  
 environmental  
 relational



copyright Deb Dana, LCSW 2021

## Resources for Regulation

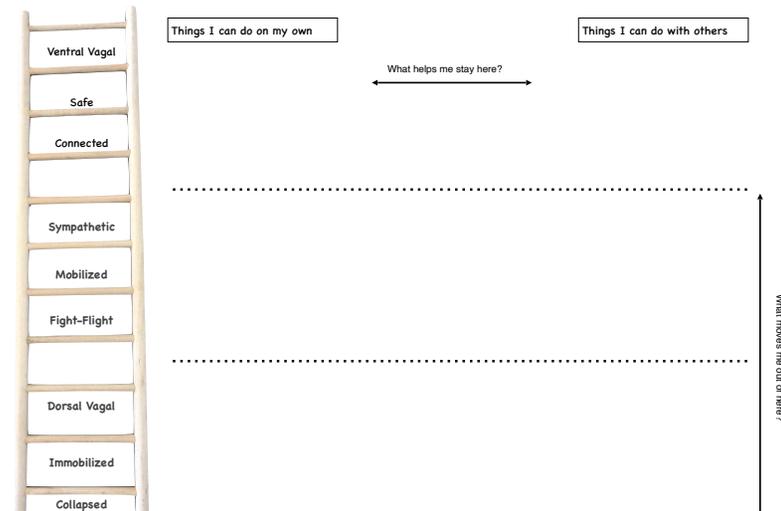
*How do I get out of here?*  
*How do I stay here?*

This map brings attention to the two categories of regulation necessary for well-being.

1. interactive/co-regulation
2. individual/self-regulation

copyright Deb Dana, LCSW 2021

## Regulating Resources Map



©2018 Deb Dana, from *The Polyvagal Theory in Therapy: Engaging the Rhythm of Regulation*. Used with permission of the publisher, W. W. Norton.

## Seeing Through States



—————> connection, safety, care

—————> anxiety, anger, action

—————> collapse, hopelessness

copyright Deb Dana, LCSW 2021

## Listening to the Story of Three States

- 3 stories waiting to be heard
- the state that is most active is the story we are listening to
- look through the eyes of each state — see the world from each perspective

copyright Deb Dana, LCSW 2021

## The Listening Practice

- Take a small, everyday experience that doesn't affect your safety or have a big impact on your life
- Look through your two survival states
- End in ventral
- Reflect on what you learned

copyright Deb Dana, LCSW 2021

We are inextricably linked...one nervous system to another...



## Following the Four R's

*R*ecognize the autonomic state

*R*espect the adaptive survival response

*R*egulate/co-regulate into a Ventral Vagal state

*R*e-story

copyright Deb Dana, LCSW 2021

“Safety is the Treatment” (Porges)

Reshaping practices remind the autonomic nervous system that it has an inherent knowing about how to flexibly navigate the autonomic hierarchy.

A flexible system is a resilient system...

...and a resilient system carries stories of possibility.

copyright Deb Dana, LCSW 2021

## The Guiding Questions

- What state am I in?
- What do I need to be anchored in ventral regulation?
- Where is the other person?
- What does their nervous system need in this moment?

copyright Deb Dana, LCSW 2021

## The Responsibility of Being Polyvagal Informed

autonomic communication always happening between  
our “selves”, others, the environment, and spirit

our state impacts the world

attending to the autonomic information we are  
sending out into the world

copyright Deb Dana, LCSW 2021

## Benevolence



The active, ongoing, use of ventral vagal energy  
in service of healing...

copyright Deb Dana, LCSW 2021