

Neurons to Neighborhoods

Los Angeles, CA

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Levels of Information Processing

COGNITIVE PROCESSING

Conceptual information processing, reasoning, meaning-making and decision making.

EMOTIONAL PROCESSING

Expression and articulation of feeling and affect. Emotional processing adds motivational coloring to sensorimotor and cognitive processing.

SENSORIMOTOR PROCESSING

Processing through the body. Sensorimotor processing involves sensory, physiological and motor sequences associated with the senses, impulses, movement, postural changes, orienting responses, physical defensive responses and ANS arousal

Sensorimotor Processing

...process that organizes sensation from one's own body and from the environment and makes it possible to use the body effectively within the environment. The spatial and temporal aspects of inputs from different sensory modalities are interpreted, associated, and unified....The brain must select, enhance, inhibit, compare, and associate the sensory information in a flexible, constantly changing pattern...

Ayres, 1989, p. 11

Evaluating Sensorimotor Processing

Look at the habits by which a person orients to, registers, organizes, interprets, and acts on information from the sensorimotor systems (sensation, movement, muscles, touch, sight, sound, smell, taste)

Ogden, 2003

Attuning to the Body

The therapist must learn to notice and name the physical patterns and the moment-by-moment organization of sensorimotor experience in the client, and teach the client to do the same:

Skin color

Quality of Tissue

Structure

Posture

Tonicity

Breath

ANS response

Facial expression

Voice

Micromovements

Vocabulary for Sensorimotor Experience

(Ogden, 1999)

twitch

dull

sharp

achy

pounding

airy

suffocating

tremble

shivery

chills

vibration

itchy

stringy

fluid

frozen

warm

radiating

shudder

numb

flaccid

blocked

goose-bump

congested

heavy

tight

puffy

bubbly

tingly

shaky

paralyzed

sweaty

moist

clammy

jumbly

jerky

energized

stringy

damp

electric

tight skin

light

fuzzy

dense

cool

throbbing

faint

quivery

pulsing

bloated

flushed

prickly

buzzy

flutter

pressure

jumpy

tense

wobbly

tingly

nauseous

spinning

dizzy

tremulous

breathless

quake

Using Cognition to Support Sensorimotor Processing

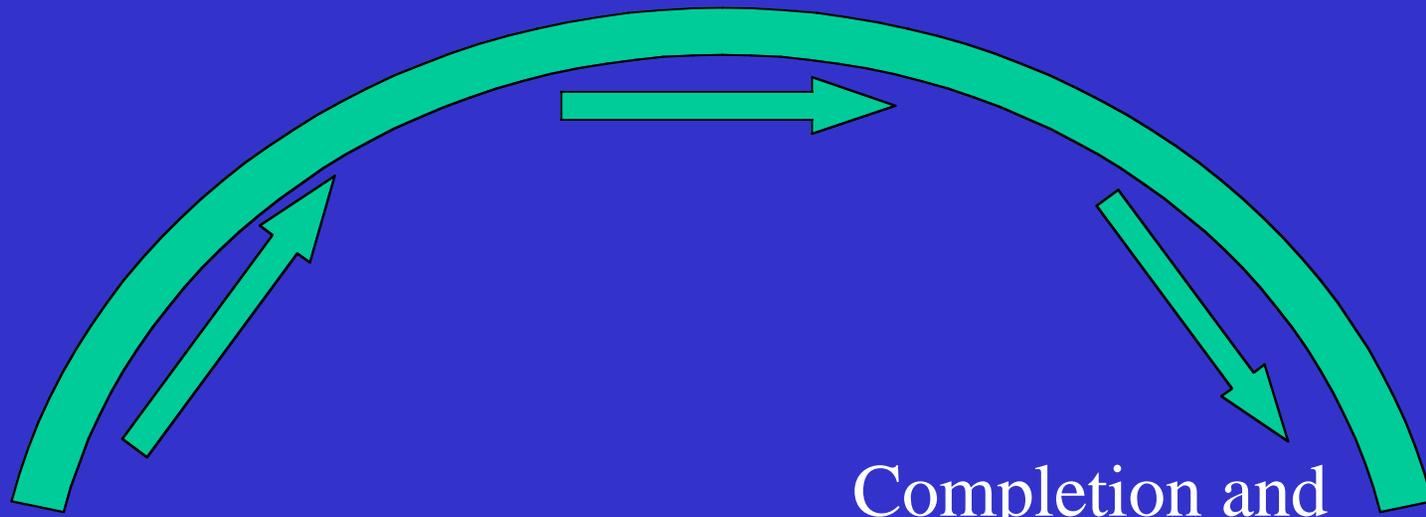
Mindfully tracking (following in detail) the sequential physical movements and sensations associated with unassimilated sensorimotor reactions to trauma, such as:

motor impulses	heart rate	movements of the spine
muscular tension	breathing	facial expression
gestures	postural changes	trembling

Various other gross motor movements or micro-movements.

Uncoupling physical sensations from trauma based emotions

Development and processing
of sensation and/or movement



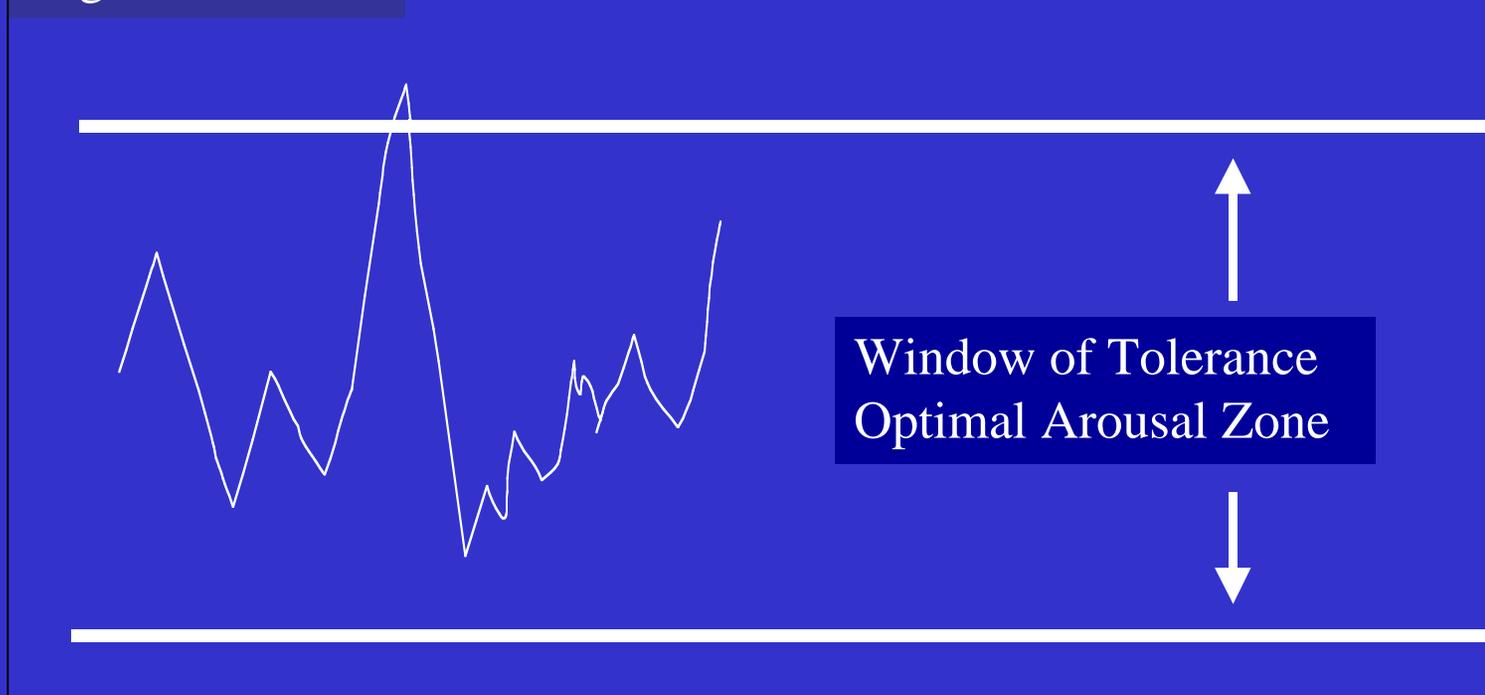
Initiation: The
beginning of sensation
and/or movement
(inhibit awareness of
emotions, content, etc.)

Completion and
resolution of
sensation and/or
movement

The Window of Tolerance

High Arousal

A
R
O
U
S
A
L



Window of Tolerance
Optimal Arousal Zone

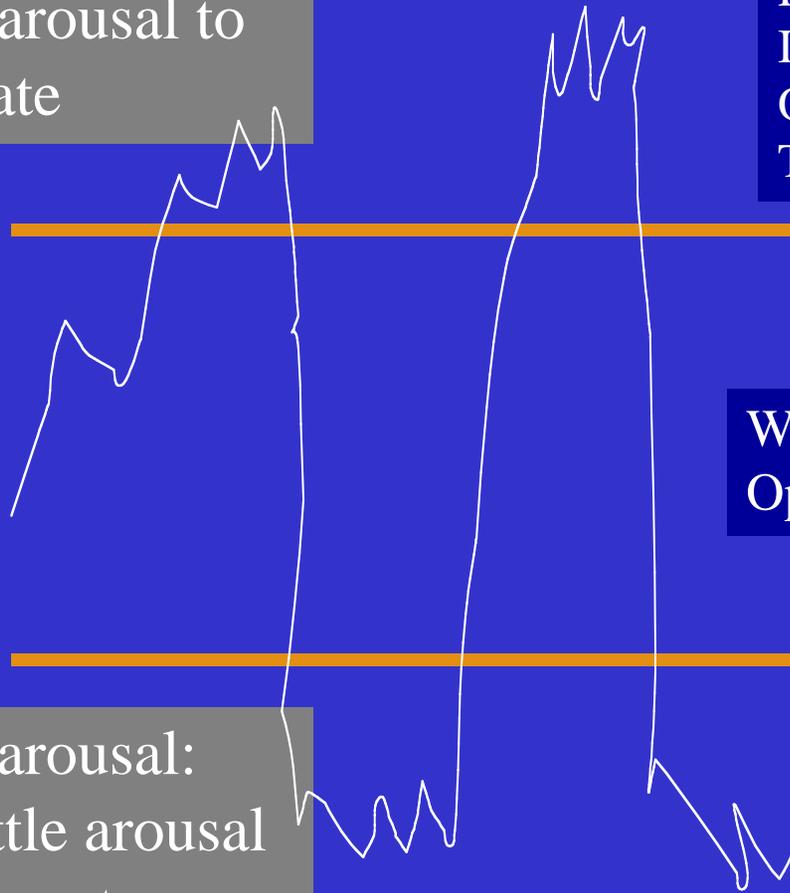
Low Arousal

Ogden and Minton (2000)

Bi-Phasic Trauma Response

Hyperarousal: too much arousal to integrate

Emotional reactivity
Hypervigilance
Intrusive imagery
Obsessive/cyclical cognitive processing
Tension, shaking, ungrounded.



Window of Tolerance
Optimal Arousal Zone

Hypoarousal: too little arousal to integrate

Flat affect
Inability to think clearly
Numbing
Collapse

Ogden and Minton (2000)

Somatic Resources

Somatic resources emerge from physical experience, but influence psychological health. They are the physical actions and capacities that support self regulation and provide a sense of well-being, competency and mastery.

The Psychology of Action

The patients who are affected by traumatic memories have not been able to perform any of the actions characteristic of the stage of triumph [mastery]. They are continually seeking this joy in action...which flees before them as they follow.

Janet (1925, p. 669)

Pleasure of the Completed Action

[An] important characteristic of the completed action, one we must do our utmost to obtain however difficult it may be, is pleasure....When an action is being functionally restored...we almost always notice at a certain moment that satisfaction reappears in one form or another, a sort of joy which gives interest to the action, and replaces the feelings of uselessness, absurdity, and futility which had formerly troubled the patient in connection with the action.

Janet (1925, p. 988-989)

Self-Regulation:

(from Allan Schore)

Auto regulation is the ability to self regulate alone without other people. It is the ability to calm oneself down when arousal rises to the upper limits of the window of tolerance or to stimulate oneself when arousal drops to the lower limits.

Interactive (psychobiological) regulation involves the ability to utilize relationships to mitigate breaches in the window of tolerance, and to stimulate or calm oneself.

Ogden 2002

Auto and Interactive Somatic Resources

- **Somatic Resources for Interactive Regulation**

 - Proximity

 - Boundaries and Defense

 - Reaching out, holding on and letting go

- **Somatic Resources for Auto Regulation**

 - Grounding

 - Alignment

 - Containment

 - Centering

Assessment of Somatic Resources

- **Content:** What the patient says about self- regulation; history
- **Bodyreading:** observations of muscular, movement, postural and structural patterns
- **Patient's awareness of the body:** sensation/tonicity in the arms and legs; sense of alignment/collapse/holding, etc.
- **Patient's awareness of the connection** between the body and personal psychology
- **Experiments:** conduct somatic experiments

Building Somatic Resources

1. Education

Teaching patients about structural and movement patterns

2. Awareness

Asking patients to be aware of inner body sensation, muscular, postural, and structural patterns

3. Experiments

Trying out different movements, gestures, and physical organization.

4. Mirroring

The therapist mirrors the patient's body posture, structure, or movement.

5. Modeling

The therapist physically demonstrates somatic resources

6. Practice

The patient repeats the actions of somatic resources with therapist and others

Somatic Trauma Responses

Social Engagement System (ventral vagal system)

facial muscles, eyes, larynx, middle ear; adaptive movement

Attachment for Survival:

voice, movement toward safe person

Flight

movement away from source of threat to potential safety

Freeze

stiffening type of immobility, shallow, fast breathing, tense muscles

Fight

movement toward the threat; aggressive action

Submission

limp type of immobility

Facilitating Sensorimotor Processing

1. The patient is taught to be aware of habitual movements, postures, or structural patterns, and to practice alternatives to these patterns.
2. The patient is taught to observe and track inner body sensation until the movement of sensation and physical impulses until the sensations and impulses have stabilized.
3. “Little experiments” are conducted to discover a patient’s automatic patterns of organization.

Teaching Mindfulness of Sensorimotor Experience

The therapist asks questions that require mindfulness of the body to answer:

What do you feel in your body?

Where exactly do you experience tension?

What happens next when your hand makes a fist?

What movement does your body want to make?

Can you describe the qualities of the tension?

What sensation do you feel in your legs right now?

Dissociation in PTSD (1)

PTSD has been classically seen as a biphasic disorder with persons alternately experiencing phases of intrusion and numbing. The intrusive phase is associated with recurrent and distressing recollections in thoughts or dreams, as well as reliving the events in flashbacks. The numbing phase is associated with efforts to avoid thoughts or feelings associated with the trauma, emotional constriction, and social withdrawal.

Prediction of Somatoform Dissociation: Jane

- duration and age of onset of bodily threat: Jane was kidnapped and raped repeatedly with a gun at age 4/5 for 5 months
- interpersonal trauma severity: prior to the actual abuse, Jane's father described in detail what would happen to her when the gun went off
- bodily threat from a person: Jane's father was the perpetrator
- lack of adequate parenting and emotional support may promote integrative failure: Jane's father told her that her mother was dead; when Jane was returned to her mother, she never spoke of the abuse because her mother would "dissolve into tears and leave"

Phase-Oriented Treatment Approach based on Pierre Janet (1898)

- *PHASE 1*: SYMPTOM REDUCTION AND STABILIZATION
- *PHASE 2*: TREATMENT OF TRAUMATIC MEMORY
- *PHASE 3*: PERSONALITY INTEGRATION (limiting belief systems, social reconnection, relationship and intimacy, life issues, risk-taking, change)

Integrating top-down and bottom-up approaches

Addresses cognitive processing which, in turn, facilitates sensorimotor processing

- uses cognition as a primary entry point in therapy
- identifies and changes cognitive distortions
- linguistic sense of self
- understanding and meaning-making
- formulating a narrative

Addresses sensorimotor processing which, in turn, facilitates cognitive processing

- uses the body as a primary entry point in therapy
- identifies and changes physical patterns
- somatic sense of self
- how the body processes information and affects meaning
- appropriate integrating narrative with somatic sense of self