

## My Body, my Trauma, my I

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# *Psychotrauma and Medicine*

4. Internationaler Kongress  
München, 14.10.18

## A note in advance ...

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"If we do not want to give up our true goal forever, then there is only one way out of the dilemma: that some of us dare to look at facts and theories, even though their knowledge is partly second-hand and incomplete - and they risk being ridiculous."

Prof. Dr. Erwin Schrödinger, 1887-1961  
Founder of Quantum Mechanics u. Physics Nobel laureate

A note in ed...

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# Knowledge or Wisdom

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## Our Topics

- The impact of psychotrauma on our body
- The Body-Mind (Soul) Dilemma
- Effects at different levels
- The consequences of psychotrauma are reversible
- The process of healing
- Integrative concept from practice

## Abuse, Mistreatment, Neglect

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- International estimates of the global prevalence of MMV\*:
- Physical abuse: 25% of all adults
- Sexual abuse: 20% of all women, and 8% of all men
- Emotional and physical neglect as the most common form of MMV
- Unrecorded??



\* WHO Fact Sheet #150, Dec 2014

## Stress, trauma and illness

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- "Anyone who has experienced and suffered traumatic stress in childhood and adolescence is more often not only mentally but also physically ill.
- The effect of these strains is strictly dose-dependent and cumulative.
- They work directly and they are life-long, i.e. "time does not heal the wounds."
- Source: Seidler H. et al., Handbook of Psychotraumatology, 2011

## Stress, trauma and illness



„The Body holds the Impact  
of Trauma“

van der Kolk, 1994

## Trauma-stress disease

- ❑ **Biological** (Selye, 1936):  
general (nonspecific) adaptation syndrome
- ❑ **Psychological (Transactional)** (Lazarus, 1966):  
emotional evaluation determines the stress response
- ❑ **Psycho-neuro-immuno-endocrinological** (Henry, 1986):  
Interplay of body, psyche and immune system

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**Body without soul?  
or  
Soul without body?  
↓  
Mind/Body medicine**

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**Medical model of disease**

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□ Body and psyche are independent entities

□ Mechanistic world view (Newton et al.)

□ Linear and monocausal cause, effect model

□ -> **split model**

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## Medical model of ...

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- Body and Mind Dilemma:**  
**Principle of Complimentarity**
- Different Phenomena
  - Theory and Method
  - Reality and Truth

## Modern Physics

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- Certain quantities do not change continuously, but in leaps and bounds (quantum physics)
- The observed can be particle or wave
- The observer (as a subject) is part of the system and has a significant influence on it
- Abolition of objectivity
- Quantum entanglement (correlation) and Quantum teleportation (communication) -> information transfer?

## Matter, energy, information?

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There is no matter but only a web of energies given shape by intelligent mind

Max Planck, founder of quantum physics u. Nobel laureate

### **Albert Einstein:**

"What is presented to our senses as matter is in reality a high concentration of energy in a relatively small space."

## Matter, energy, information?

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Sentence of intention  
as an  
Information channel?

„Constellation of the Intention“ (IoPT)  
as  
resonance method?

I / Identity (psychology)



**Psychotrauma**



Body (physiology)

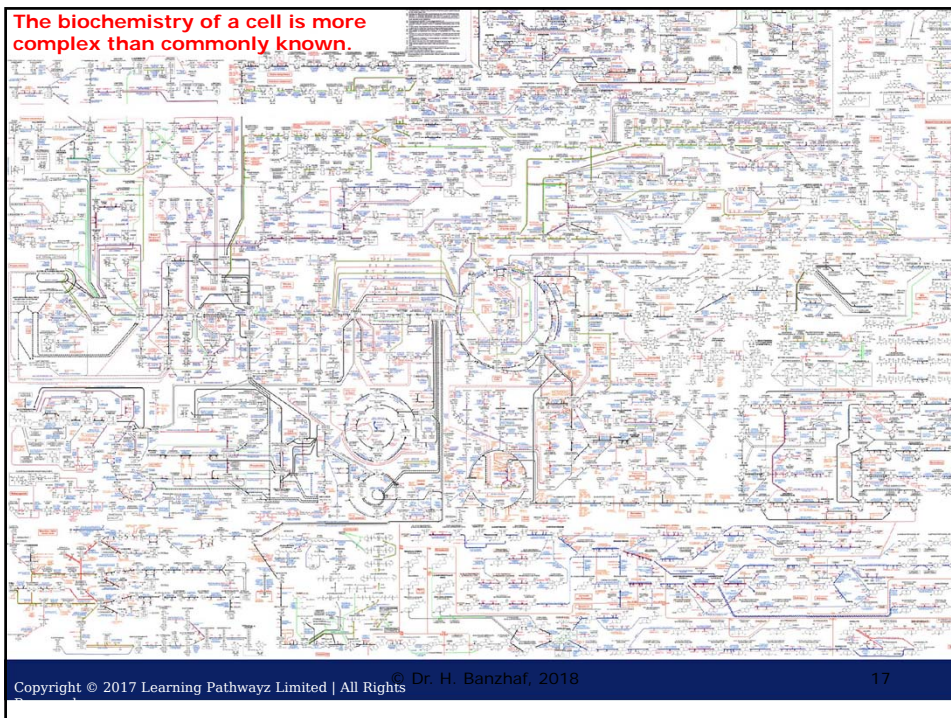
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The consequences of  
psychotrauma for our body

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## The triune brain

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- ❑ **Cerebral cortex ("human brain", neocortex)**
- ❑ Ratio, mental abilities, thinking, seeing, ...
- ❑ **Intermediate, midbrain ("mammalian brain")**
- ❑ Limbic system: emotions, implicit memory, ...
- ❑ **Brain ("reptile brain")**
- ❑ vital functions (heartbeat, breathing, body temperature ...)
- ❑ *Fight, flight, paralysis*

## The triune brain

Fragmentation of coherence  
from feeling, sensing  
and thinking

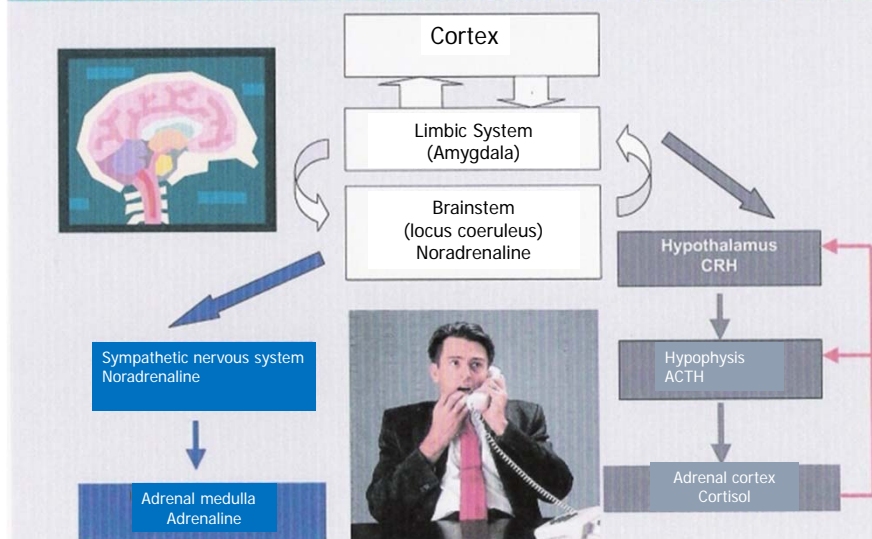
## Regulative neural networks

- **Prefrontal Cortex:** central integration function: meaning, classification, reaction ("watchtower")
- **Thalamus:** filter for autobiographical memory ("cook")
- **Hippocampus:** memory (explicit memory), emotional evaluation, Control of the "I"- function
- **Amygdala:** "fire alarm", "alarm bell" for emotionally negative stimuli, anxiety, high stress, trauma
- **Corpus callosum:** Exchange of information between left and right brain (earlier in time development)
  - Noises, touch, odors ....
  - Remembering traumatic experiences activates right and deactivates left brain
- **Cingulum:** physical perception of who one is ("Inner GPS"), coordination of emotion and cognition
- **Insula:** connects the visceral sensations with emotions

## Regulative neural networks

Disruption of  
education and regulation  
of self-esteem, "I" structure,  
identity

## Two axes of Stress Response



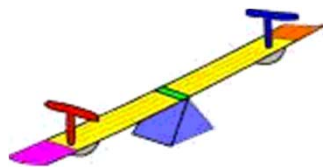
## Stress Memory

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- Very early facilitation of stress response
- Cortisol as a chronic stress hormone with a high neurodegenerative / toxic potential
- **Permanent up-regulation and over-stimulation of the autonomic nervous system**
- Change in glucocorticoid receptors (Fisch et al., 2004)

## Imbalance in the nervous system

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### **Sympathicus**

Tension  
Energy supply  
Motivation

### **Parasympathetic**

Relaxation  
Regenerative processes  
Healing

*Heart rate variability (HRV) as a marker for dysbalance*

## Psychotrauma generates toxic stress

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- > Nervous system: hyperactive stress hormone axis (HPA axis)
- > oxidative / nitrosative stress
- > Hormone system: neurotransmitter disorder
- > Immune system: chronic inflammation
- > Cell level: mitochondriopathy (cellular energy deficiency)
- > chronic (multisystem) disease

## Psychotrauma generates toxic stress

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### **Dose-effect**

**The greater the experience of abuse,  
the greater the inflammation  
and the influence on the mitochondria**

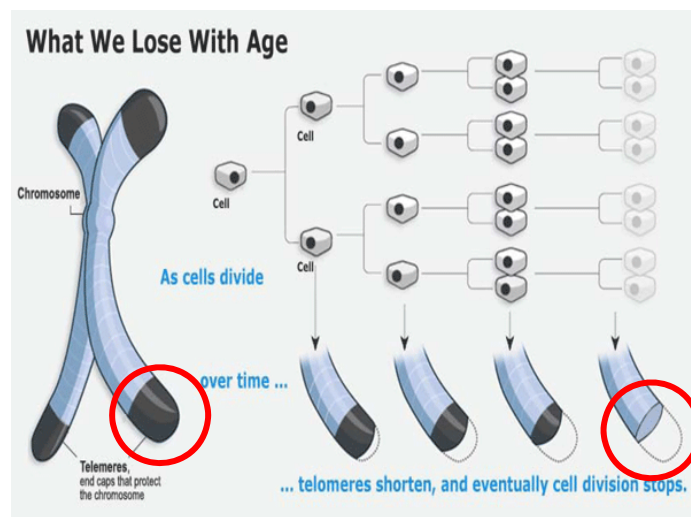
Source: Böck et al. (2016), Mitochondrion

## Why do we age and get sick?

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- ❑ **Gene theory** (genotypic aging program, programmed cell death)
- ❑ Theory of **free radicals** (cell damage due to oxidative and nitrosative stress)
- ❑ **Wear theory** (telomeres, limited cell division)

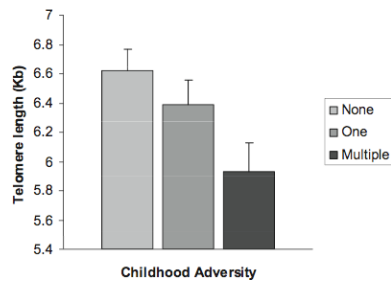
## Aging process and telomeres



Source: <https://www.ta-5.de/media/image/dd/2e/24/Alterung.jpg>

## Childhood psychotrauma shortens telomeres and speeds up the premature aging process

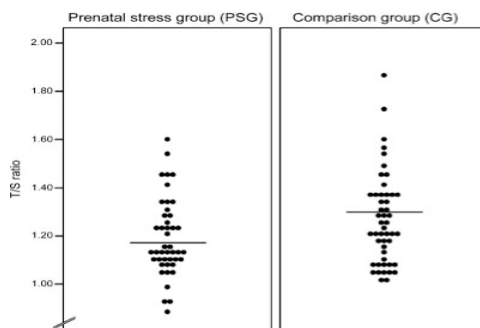
- Aversive life events
- Abuse
- Rape



Source: Damjanovic et al. (2007), *Journal of Immunology*; Tyrka et al. (2010), *Biological Psychiatry*; Kananen et al., (2010), *PLOS one*; Simon et al. (2006), *Biological Psychiatry*; Kiecolt-Glaser et al. (2011), *Psychosomatic Medicine*; Karabatsiaklis, Dissertation (2011)

## Psychotrauma is inherited

Psychosocial stressors during pregnancy (including domestic violence) lead to shortened telomeres in the offspring



Source: Entringer et al., 2011, *PNAS*

## Epigenetics as Missing Link

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- Psychotrauma damages cellular function and causes symptoms that we call disease
- **Connection between psyche and body**
- Soft inheritance
- Transgenerational inheritance

## Epigenetics as Missing Link

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- **Non-tangible cause  
(Psychotrauma)**
- 
- **Material effect  
(Symptom, illness)**
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## Trauma, epigenetics and chronic disease

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### Psychotraumata & mental stress, Pollutants & toxins, heavy metals, mobile communications



Biochemical vicious cycle: oxidative and nitrosative stress ↑  
NO / ONOO cycle ("no, oh no")



Chronic inflammation ↑

mitochondrial damage (ATP ↓)



**Chronic disease (multisystem diseases)**

## Causes and effects

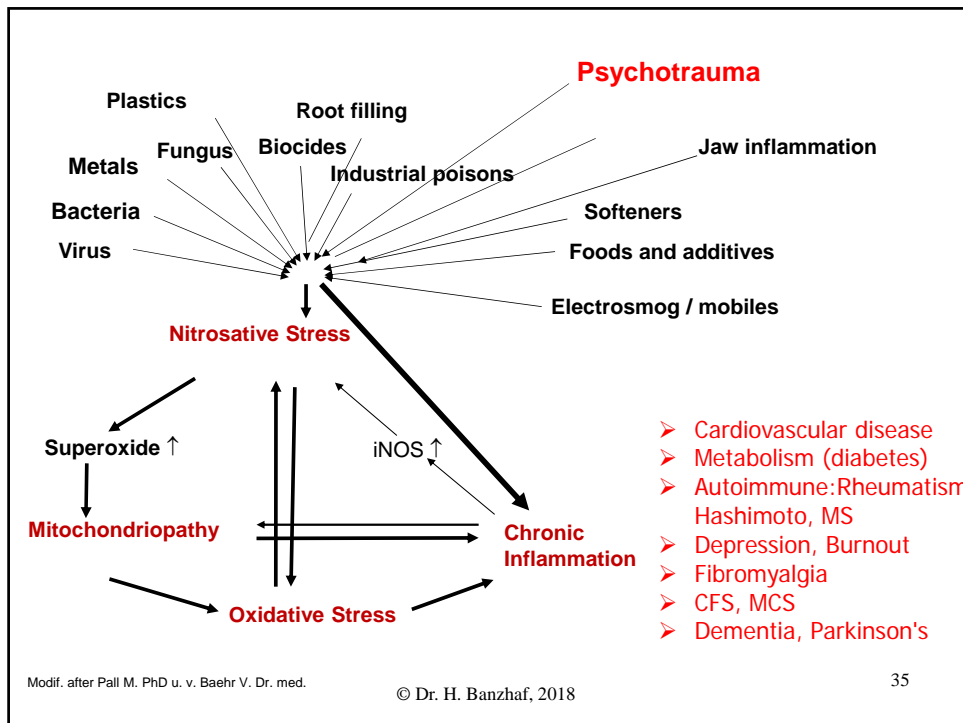
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### Causes

- ❑ Psychotrauma
- ❑ Pollutants & poisons
- ❑ Heavy metals
- ❑ Electrosmog (EMF)
- ❑ Lack of exercise
- ❑ Malnourishment (over- and malnutrition)

### Effects

- Cell stress
- Chronic inflammation
- Mitochondrial damage
- Lack of energy
- Varied symptoms
- Chronic diseases



# Psychotrauma

leaves behind traces in cell memory, which are also passed on.

## Transgenerational trauma is reversible

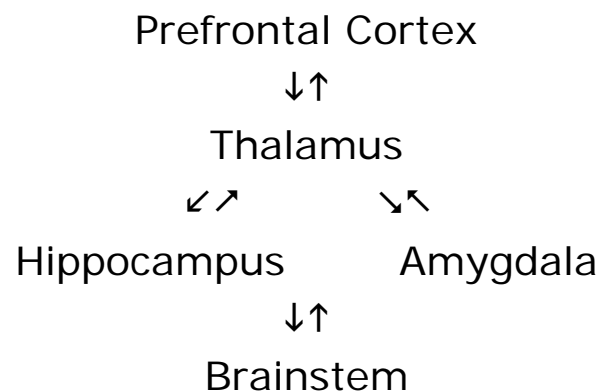
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- Inheritance is interrupted by improving living conditions
- Environmental conditions are changing the consequences of psychotrauma
  - Epigenetic transmission of dysfunctional biochemical reactions to the offspring of trauma victims
  - Increase in glucocorticoid receptor (GR) expression and decrease in DNA methylation of the GR promoter in the hippocampus (also in the germ cells of adult exposed persons and their male offspring)

*Source: Potential of Environmental Enrichment to Prevent transgenerational Effects of Paternal Trauma; Gapp K. et al. Neuropsychopharmacology vol. 41 (2016)*

## Top down/bottom up - Regulation

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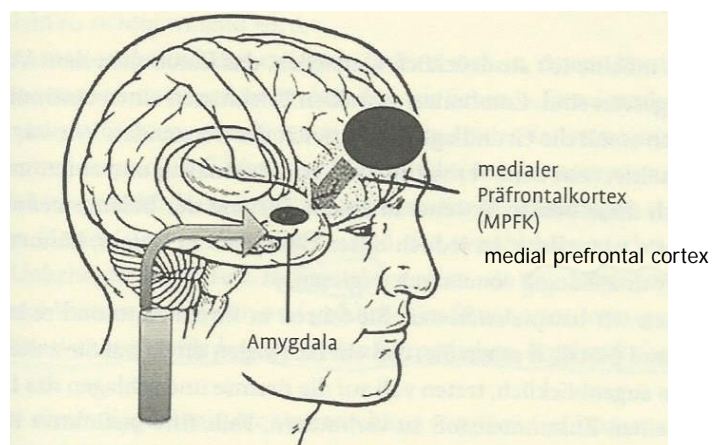


Top down/butterfly

## IoPT:

Integration of sensations,  
feeling and thinking

## Control of emotional centers through the watchtower



From: The body keeps the score, van der Kolk B., 2016

## Control of emotional centers through the watchtower

**Increased activity  
in the left prefrontal cortex  
through "mindfulness training"**

(Goller H., Experience, Remember, Act –  
An Introduction to Psychology, 2009)

From: The body keeps the score, van der Kolk B., 2016

## What protects the telomeres?

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- ✓ Exercise !
- ✓ Nutrition !
- ✓ Mindfulness!
- ✓ Constellation? (-> research needs!)

## What protects the telomeres?

- ✓ Support ...
- ✓ -> healthy parts?
- ✓ -> survival parts?
- ✓ Constellation? (-> research needs!)

## Psychotraumata associated with ...

- high resource consumption of micronutrients, neurotransmitters (by survival parts)
- limited detoxification performance of the organism (e.g., HPU, COMT)

## Body and psyche are one unit

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- Separation between organic and psychological causes obsolete (Hill, 2014)
- Causes of dementia:
  - Chronic mental and traumatic stress (inner world)
  - Environmental pollutants (outside world)
- As within, so without (ecology, environmental destruction?)

## Body and psyche are one unit

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**Paradigm shift?**

## The process of healing

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- ❑ Balancing the HPA axis
- ❑ Activation of the parasympathetic nervous system
- ❑ Cell stress ↓
- ❑ Inflammatory response ↓
- ❑ Energy generation in the cell ↑
- Complex interaction through epigenetic changes

## The process of healing

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- ❑ **-> Synaptogenesis**  
(Hebb's Law)
- ❑
- ❑ **-> Neurogenesis**  
(e.g., in the hippocampus)



## Healing Elixirs

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- Patience: neural networks ↑
- Acceptance: fight-, flight mode ↓
- "Body awareness (in safety):" it's over" (visceral sensations, intuitive body awareness)
- Compassion (with me) with all inner parts

## Multimodal integrative therapy concept

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- Integration of all aspects of our being in the healing process
- Physical (feel: sensory, motor ...)
- Biochemical, neuro-endocrinological, immunological (vital substances, neurotransmitters, pollutants, hormones ...)  
emotional (feel, "intuitive feeling")
- cognitive (recognize, interpret, re-evaluate ...)

## A4 - Concept®

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- **Fill up** (vital and micronutrients, nutrition)
- **Detoxify** (pollutants, chemicals, metals ...)
- **Constellation** (identity-oriented psychotrauma therapy, IoPT)
- **Mindfulness** (MBSR: Body-Oriented Mental Training to regulate emotions, as an inner and outer attitude, and a basis for all therapeutic interventions)

## A4 - Concept®

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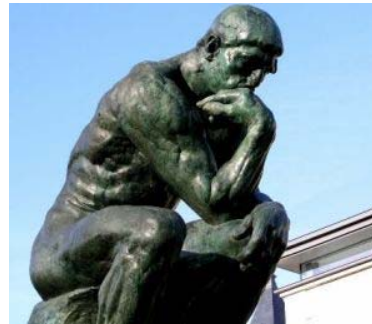
- **Aim:**
- **Support the ability for self-regulation**
- (Autopoiesis: Self-organization Living systems)



## Neuroplasticity and healing

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"Each time we contemplate on the past, we subtly transform its representation in the brain and alter something in the underlying neural circuitry"



(Jonah Lehrer on Memory reconsolidation, K. Nader et al., 2010)



Thank you ! 56

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