

The Brain on the Mind

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Four Noble Truths of Buddhism

- I There is suffering
- II Suffering has a cause
- III The cause can be removed
- IV The 8-fold path to do this

We are addicted to a symptomatic medicine with side effects

We can free ourselves from it

Symptomatic medicine against: selflessness

But we do not need it: the anxiety can be domesticated

The addiction pandemic

The three characteristics

We are not the boss, but we like to be in charge

3 characteristics (daily life)

- change
- no control
- suffering

3 Characteristics (deeper level: *the process*)

- change mental chaos consciousness is discrete
- no control selflessness depersonalisation
- suffering resistance nausea

One absolutely does not want to see this

Dissociation

What usually is together falls apart:

input—feeling—cognition—action—consciousness

dissociation \mapsto $\left\{ \begin{array}{l} \text{desomatization} \\ \text{depersonalization} \\ \text{derealization} \end{array} \right.$

Temporarily one goes through what John of the Cross calls

dark night of the soul:

anxiety, paranoia, disenchantment

After that one comes into states of beauty:

equanimity, calmness, bliss

The *cover-up*: a symptomatic medicine

Action based on *feeling* and thinking

hides the view of the 3C

+ feeling → desire, greed
– feeling → anxiety, hatred, depression } → *repersonalization*

one feels again like a person

Each time our greed or anxiety makes us do something successfully
we get more addicted to feeling, the '*glue of our consciousness*'

It is the very cause of war

Consequences

We have addictive behaviour: gambling, shopping, working, ...

We fight about possessions, sex, honour, religions, ...

We are in war

We use addictive drugs

> 20.000.000.000 \$/year psychiatric medication
(500.000 young children in the USA use these)
with side-effects and casualties
much bigger problem than with street drugs

It is not exaggerated to speak about an “Addiction pandemic”

Neurophysiological hypothesis for 3C

The fields of our different senses have to come together (binding)

C. von der Malsburg's hypothesis (1980-ies):

this happens through synchronization of neurons

Evidence was found notably for 30-80 Hz band

Hypothesis: the dissociation (3C) is caused by a desynchronization

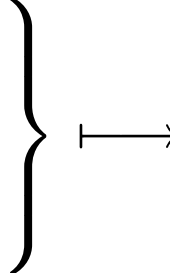
Hypothesis: Concentration meditation \mapsto synchronization

Hypothesis: Insight meditation \mapsto desynchronization

plus learning to completely domesticate the fear

Neurophysiological hypothesis for cover-up

Phenomenological observations:

- Emotional states last a while
 - Change of emotional state feels like flow in brain
 - Emotional states bind 3C to 'normal' consciousness
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Liquor (brain liquid) hypothesis (1910¹, 1980², 2003³, 2009⁴):

Liquor is more than a drainage system

Mental states are caused by chemical milieu of the liquor

[Traditional view: liquor *supports*, *feeds* and *drains* the brain]

¹Cushing & Goetsch, ²Borison, ³Sewards & Sewards, ⁴Veening, de Jong, HB

Evidence for liquor hypothesis

Sewards & Sewards 2003

- **vasopressin** in liquor \mapsto dominance
- **CRF** in liquor \mapsto fear

Eric Roubos, Jan Veening, HB and aio Marinella Calle 2006

- There are many **liquor** contacting neurons at strategic sites containing **opioids** and **stress** hormones and other **neuropeptides**

Jan Veening, Trynke de Jong, HB focussing on **Oxytocin, OT** 2009 pend.

- **liquor** flow is under **fast active control**
- **OT** in **liquor** may be 10^3 x that in blood with independent rhythm
- **OT** sources PVH & SON (resp. near ventricle **liquor** and 'outer' **liquor**)
- **OT** receptors for 80% near **liquor** at several sites

behavioural column sex, maternal & affiliative reactions, fear, aggression

(para)core areas physiological reactions

cortex memory & learning

olfactory areas adapting olfactory sensitivity

- PVH and SON project to first two sites