

Circuits of Fundamental Peace

Hypnosis as a pathway to emotion regulation and self-integration

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A question Liège has helped to define

1 Hypnosis in the pain system

Faymonville et al. (2000) showed that hypnotic modulation of pain runs through the midcingulate cortex: clinical hypnosis became a neuroscience object.

2 Hypnosis and the resting brain

Demertzi et al. (2011) mapped how hypnosis reshapes default-mode and 'extrinsic' frontoparietal connectivity at rest.

3 Hypnosis as care

Self-hypnosis and self-care programmes, VR hypnosis and other modified states: taking hypnosis from the scanner into patients' lives.

Today's route

1 The puzzle | 2 Three networks | 3 Fundamental Peace | 4 Model and predictions | 5 Clinic and collaboration

Hypnosis works. The open question is why

85

controlled experimental trials in a meta-analysis of hypnotic pain relief

Thompson et al. (2019)

Clinical evidence also points to reduced anxiety and reduced trauma-related dissociation.

Symptom view

Hypnosis as a technique that reduces pain, anxiety and intrusive thoughts, one target at a time.

Our proposal

Hypnosis also works as a mechanism of emotion regulation and self-integration: it reorganises how large-scale networks hold emotion and self.

Three networks that hold emotion and self

DMN

Default mode network

mPFC · PCC · precuneus · angular gyrus

Self-referential thought, mind-wandering, rumination

SaN

Salience network

dACC · anterior insula

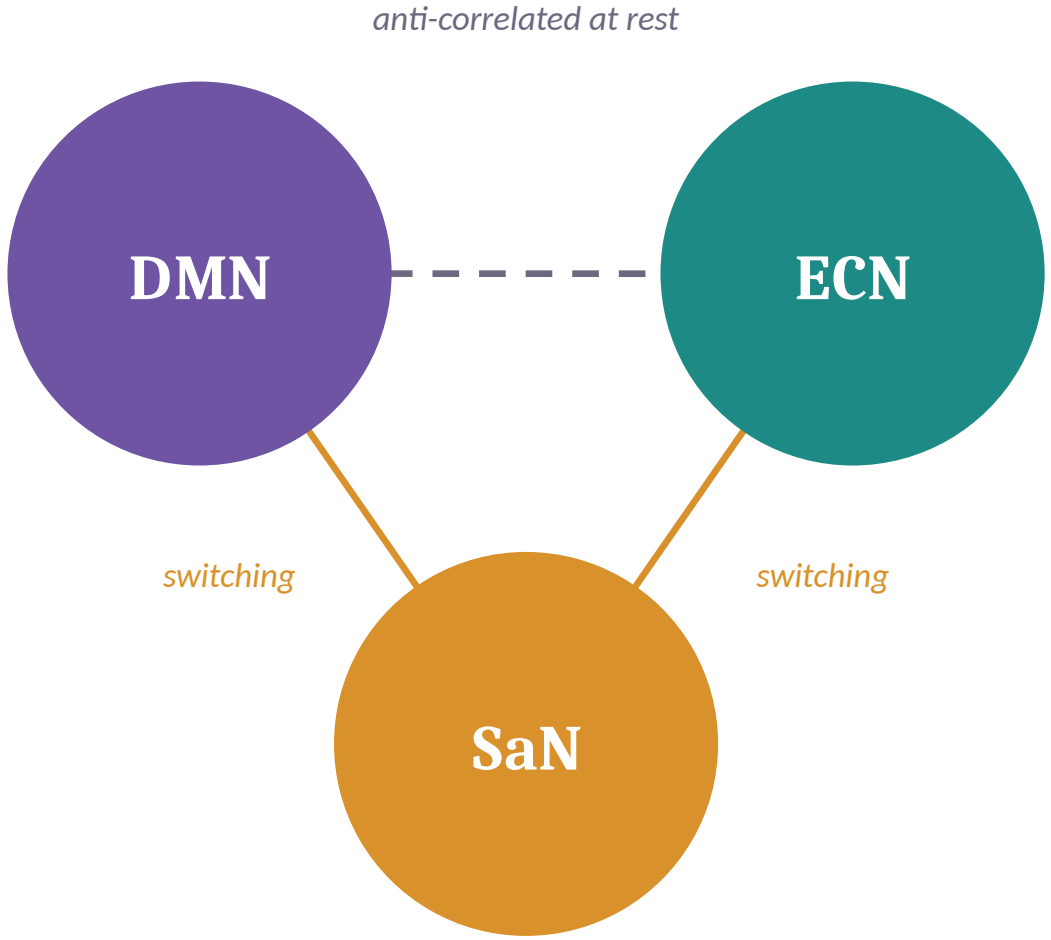
Detects what matters; switches between DMN and ECN

ECN

Executive control network

dlPFC · posterior parietal cortex

Goal-directed attention and regulation



Triple network model: Menon (2011); DMN–task anti-correlation: Fox et al. (2005)

What hypnosis does to the three networks

McGeown et al., 2009

Less anterior default-mode activity after induction in highly hypnotizable participants

DMN ↓

Demertzi et al., 2011 Liège

Reduced 'extrinsic' frontoparietal connectivity versus mental imagery; region-specific DMN changes

DMN · extrinsic

Hoeft et al., 2012

High hypnotizables show stronger dlPFC–dACC coupling at rest: a trait signature

ECN–SaN ↑ (trait)

Jiang et al., 2017 N = 57

During hypnosis: ↓ dACC activity, ↑ dlPFC–insula coupling, ↓ dlPFC–PCC coupling

SaN · ECN · DMN

A recurring signature: quieter self-referential processing, tighter coupling of control and salience

The honest picture: a pattern, not yet a law

35

fMRI studies

689

participants

A 2024 systematic review found connectivity reported both up and down, depending on the suggestion and the protocol.

Bralić (2024), preprint

Small samples

Often under 30 participants, while brain-wide associations need far larger N (Marek et al., 2022)

Heterogeneous methods

Different inductions, suggestions and analysis pipelines

Skewed samples

Highly hypnotizable participants are over-represented

Inferred causality

Links from network change to experience are mostly inferred, not tested

So the network story in this talk is a hypothesis to test.

FUNDAMENTAL PEACE

Integrated regulatory capacity under changing conditions

Operationalised as a dynamic neuro-experiential state with four components.

Gallardo & Chetri (2026), Behavioral Sciences 16(3), 395 · doi:10.3390/bs16030395

Four components, one capacity

1 Flexible attentional control without effortful suppression

Attention directed with ease rather than strain: focused yet open.

2 Emotional coherence across self-states

Inner continuity as emotions shift, without fragmentation or dissociation.

3 Reduced self-referential rigidity

Less rumination and self-criticism; thoughts held more lightly.

4 Compassionate self-awareness

Non-judgmental, kind observation of oneself.

What Fundamental Peace is not

Construct	Its core	What Fundamental Peace adds
Equanimity	Affective neutrality, even-mindedness	Active regulation and warmth toward oneself, not neutrality
Well-being (Ryff)	Positive evaluation of one's life and functioning	A capacity that can be present in pain, not a judgment about life
Flow (Csikszentmihalyi)	Absorption in a challenging task	Not bound to a task; keeps self-awareness online
Mindfulness (Kabat-Zinn)	Present-moment, non-judgmental attention	Adds coherence across self-states; mindfulness is one route in

Full comparison: Table 2 in Gallardo & Chetri (2026)

From network change to lived experience

PHASE 1

1 Network reconfiguration

- DMN activity decreases
- ECN–SaN coupling increases
- DMN–ECN connectivity shifts

PHASE 2

2 Cognitive-affective reorganisation

- Less rumination
- Enhanced control and response to suggestion
- Greater emotional flexibility
- Access to dissociated experience

PHASE 3

3 Experiential integration

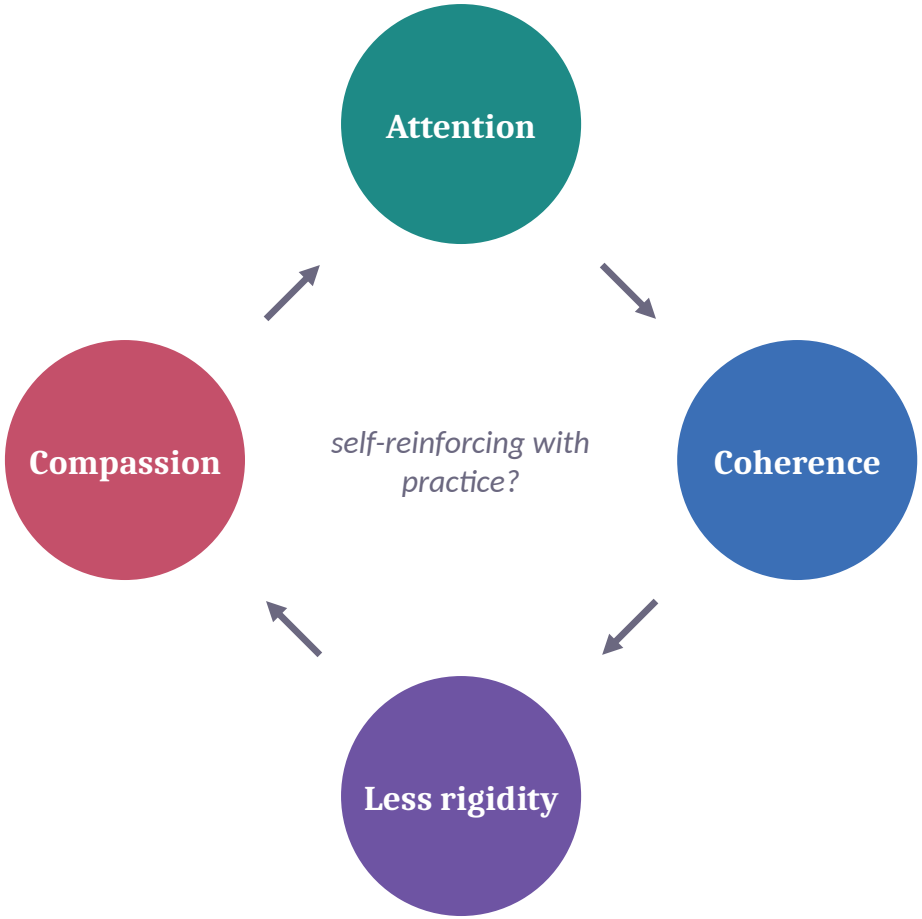
- The four qualities of Fundamental Peace emerge and reinforce each other

Induction opens a window of experiential plasticity; suggestion and practice shape what is learned in it.

Four pathways, one per component

Network change	Mechanism	Component
DMN activity ↓	Habitual self-narrative is interrupted	Reduced self-referential rigidity
ECN–SaN coupling ↑	'Effortless' focused attention	Flexible attentional control
DMN–ECN connectivity shifts	Emotional memory and regulatory control become co-accessible	Emotional coherence across self-states
Defensive processing ↓	Space opens for decentred self-observation	Compassionate self-awareness

From a state in session to a capacity in life



Moderators

- Hypnotizability: trait ECN–SaN coupling (Hoeft et al., 2012)
- Trait absorption and dissociative capacity
- Trauma history and felt safety
- Expectancy and the therapeutic relationship
- Repetition through self-hypnosis

How this sits beside the major theories

Dissociated control *Woody & Bowers, 1994*

Suggestions act while executive monitoring is bypassed.

Cold control *Dienes & Perner, 2007*

Intentions are carried out without awareness of intending.

Top-down suggestion *Oakley & Halligan, 2013*

Suggestion reshapes the expectations that build experience.

Social-cognitive *Lynn et al., 2015*

Expectancy, motivation and context drive responding.

Fundamental Peace models what hypnosis can train, not what hypnosis is. It is compatible with each account and adds a measurable target state.

The FP20: measuring Fundamental Peace

20

items

4 × 5

components × items

1–7

Never true → Always true

0–100

normalised scores

1 Flexible attentional control

"I can direct my attention to what matters without forcing it."

2 Emotional coherence across self-states

"I can hold contradictory feelings without fragmenting or becoming overwhelmed."

3 Reduced self-referential rigidity

"I can observe my own thoughts without identifying rigidly with them."

4 Compassionate self-awareness

"When I fail, I respond to myself with the compassion I would offer a friend."

Validation pre-registered on OSF and approved by WHF IRB #1 (doi:10.68220/whf.2026.005) · For researchers: lmgallardo.org/fp20-research

Three levels of measurement

1 Self-report

- FP20 (primary)
- FFMQ · Self-Compassion Scale
- Experiences Questionnaire (decentering)
- Tellegen Absorption Scale

2 Behaviour and cognition

- Attention Network Test · SART
- Reappraisal and emotion-interference tasks
- Rumination induction
- Narrative-coherence coding

3 Neural and physiological

- Resting-state DMN connectivity
- Task fMRI: ECN–SaN coupling
- EEG markers of absorbed attention
- Heart-rate variability

Six testable predictions

1

Greater DMN reduction during induction predicts a greater drop in rumination and rigidity

2

Boosting ECN–SaN coupling (neurofeedback, stimulation, training) increases hypnotic responsiveness and access to FP

3

Trauma and dissociation show altered DMN–ECN connectivity that hypnosis may normalise

4

The four components correlate and jointly predict emotion regulation better than any one alone

5

Sustained self-hypnosis practice produces lasting resting-state changes that mediate well-being gains

6

Network reconfiguration mediates the link between suggestibility and clinical outcome

Clinical translation

Phase-based trauma work, with hypnosis widening the window of tolerance (van der Hart et al., 2006)

Stabilisation and resources → **Memory processing and ego-state integration** → **Reintegration into daily life**

Emotion regulation training

Emotional flexibility, reappraisal, somatic regulation and compassionate self-talk, rehearsed in trance

Regression work

Age regression as structured access to earlier self-states: a direct target for emotional coherence (Gallardo, 2026)

Integration and training

Alongside CBT, mindfulness, psychodynamic and somatic therapies; 40–60 h initial training plus supervision for trauma work

A contemplative map of depth: the YVH model

	Stage of knowledge (jñāna-bhūmikā)	Paired trance depth
7	**Turyagā** *abiding in the fourth*	Pure awareness
6	**Padārthābhāvanā** *non-perception of objects as separate*	Ultra-deep state
5	**Asaṃsakti** *non-attachment*	Plenary trance
4	**Sattvāpatti** *attainment of being*	**Deep trance**
3	**Tanumānasā** *thinning of mind*	Medium trance
2	**Vicāraṇā** *self-inquiry*	Light trance
1	**Śubhecchā** *good desire*	Hypnoidal state

Yoga Vāsiṣṭha Hypnotherapy (YVH)

- Pairs the seven stages of knowledge of the Yoga Vāsiṣṭha with seven depths of trance
- Primary therapeutic zone: Sattvāpatti × deep trance
- Measured endpoint: Fundamental Peace, with the FP20
- A heuristic correspondence for research, not a claim that attainment and trance depth are identical

Gallardo (2026) · doi:10.68220/whf.2026.001
lmgallardo.org/vasistha

Where our work meets yours

Self-hypnosis + self-care

Liège programmes in chronic pain and oncology pair a hypnotic state with a kind stance toward oneself (Bicego et al., 2021; Grégoire et al., 2023).

In FP terms: training compassion alongside attention, coherence and flexibility.

Modified states compared

Hypnosis, self-compassion meditation and self-induced cognitive trance studied side by side (Grégoire et al., 2022).

Our question: different routes to one regulatory endpoint?

Self-regulation of feeling states

Mouheb, Cleeremans, Faymonville & Vanhaudenhuyse (2025) place hypnosis in the self-regulation of feeling states.

Shared premise: hypnosis as self-regulation, not only symptom control.

What we do not yet know

1. ECN–SaN and DMN–ECN findings are limited and inconsistent
2. Links from network change to experience are largely inferential
3. Neuroimaging samples are often under 30 participants
4. Induction and analysis methods are heterogeneous
5. Highly hypnotizable participants dominate the evidence
6. FP20 validation is pre-registered but not yet complete
7. The model was built mainly on WEIRD populations
8. Few large clinical RCTs test the mechanism directly

Questions I would love to explore with you

1. Does change on the FP20 track network reconfiguration across a self-hypnosis / self-care programme?

   rs-fMRI · EEG · HRV

2. Do hypnosis, meditation and self-induced cognitive trance reach FP through different network routes?

   within-subject comparison

3. Can low hypnotizables reach FP through VR hypnosis or training?

   moderator design

4. Which component moves first, and does compassion stabilise the others?

   intensive longitudinal sampling

Three take-homes

1. Hypnosis can be studied as training a regulatory capacity, not only as relieving symptoms.
2. Fundamental Peace gives that capacity a definition, four components and a measure.
3. The network story is a testable hypothesis, and Liège is a natural place to test it.

“Fundamental Peace is not the absence of pain… it is the transmutation of its energy into love and compassion.”

Thank you · Questions welcome

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