



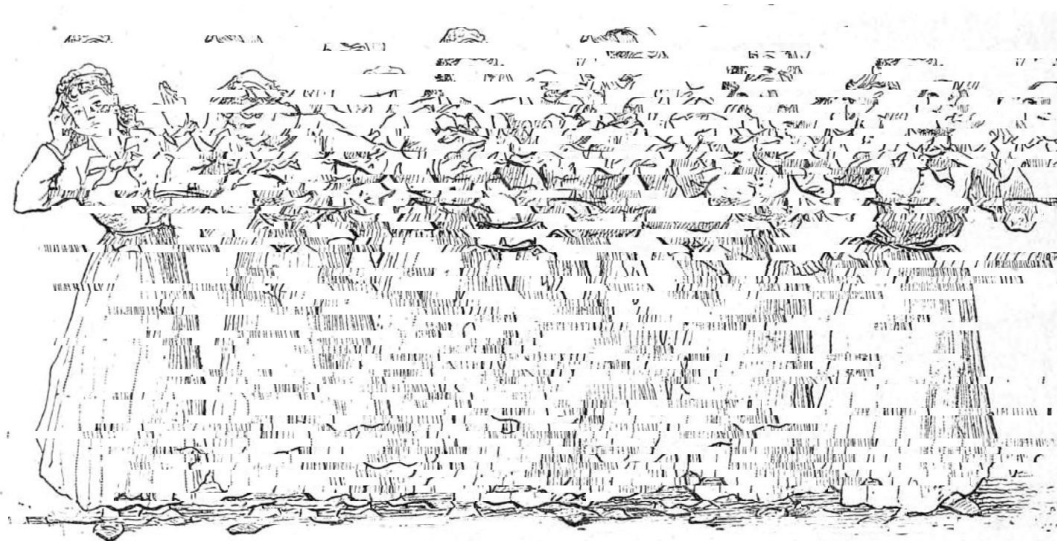
A
Future
History
of
FND

Greetings!



- FNDer since 2010
- Diagnosed in late 2017
- Advisor to research + medical teams
(American Academy of Neurology, King's College London, Katlab @ UCL, NHNN, FND Society)
- Doing stuff in the FND community

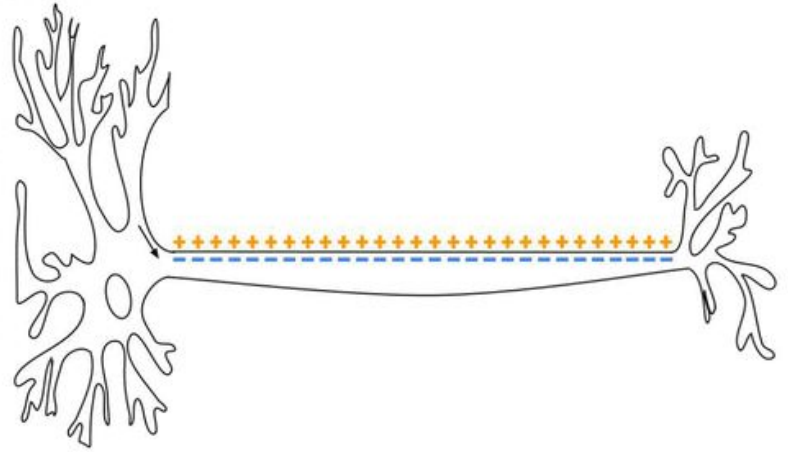
What is FND?

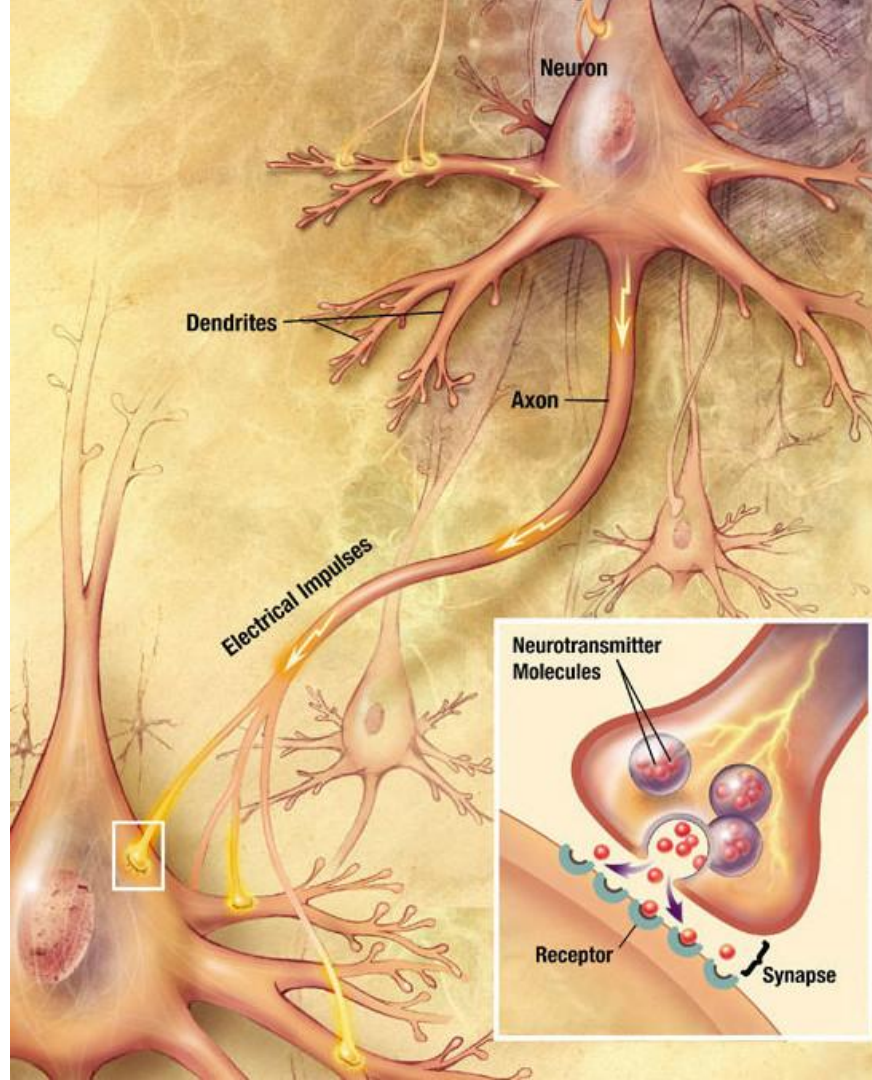


- Disorder of brain function
- Often disabling, distressing, painful
- Something triggers brain networks to change their communication patterns
- The brain follows its normal rules... into a glitch

A Brief Tour of Your Brain: Tree View

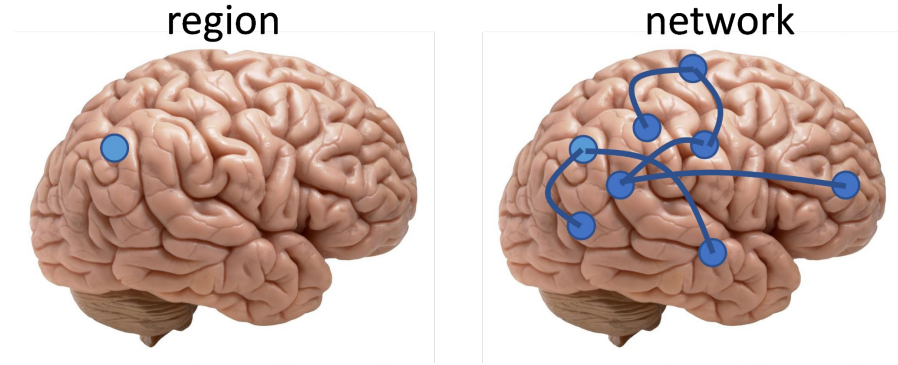
- Brain cells fire electrical bursts called “action potentials” or “spikes”
- Spikes trigger release of chemicals called neurotransmitters
- These float across a gap (synapse) to activate next neuron, causing more spikes





A Brief Tour of Your Brain: Forest View

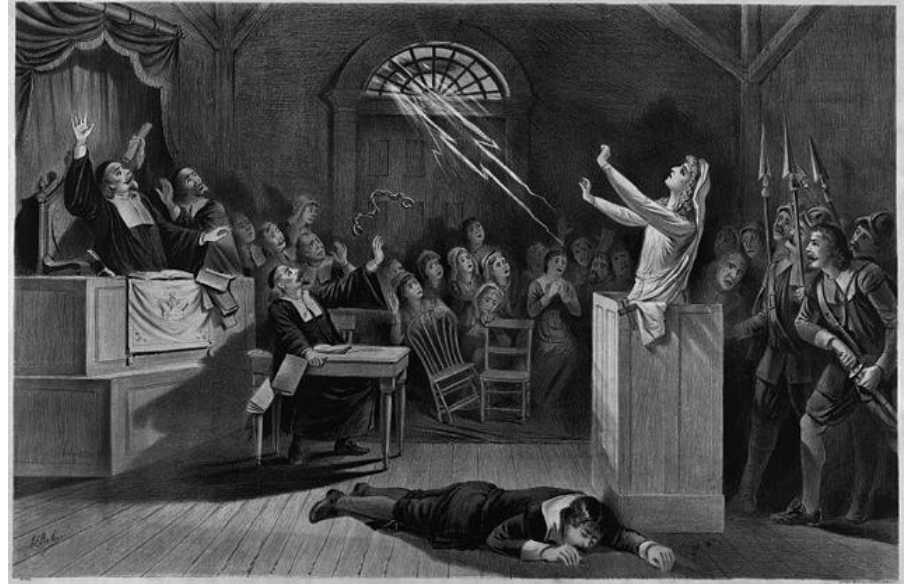
- Brain cells form larger “areas”
 - Examples: amygdala, hippocampus
- Brain areas work together in teams called “brain networks”
- FND = changes in communication
 - Affects how easily + persistently they fire
- FND affects core brain networks
 - Responsive to both physical and psychological stressors because *these networks handle both*



From “What kind of brain network? Overlapping and dynamic”
by Luiz Pessoa

It's All in Your.. Womb??

- In Middle Ages, FND symptoms blamed on witchcraft
- Early “modern” Europeans reinterpreted this as: Hysteria!
 - Borrowing from Ancient Greeks
- Theory: symptoms caused by renegade uterus (really)
- Sexist stereotypes of “emotional women”



“The Witch no. 1” by Joseph E. Baker, lithograph, 1892

Tracking Hysteria in the Brain (1700-1800s)

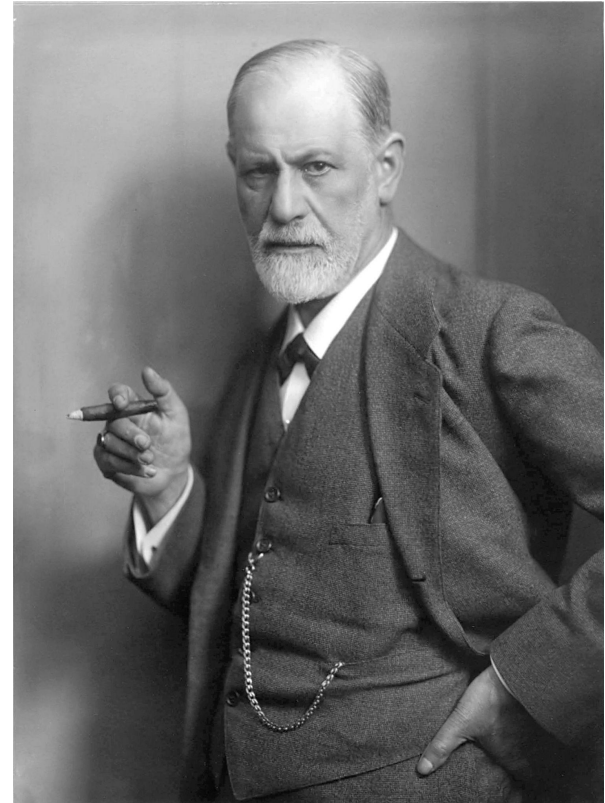
- Confusion >> improved definition
- Uterine theories >> neuro
- Basically, medicine gets better
- By 1890s FND could be reliably diagnosed
 - In both men and women!
 - Charcot's "*functional*" lesion (roving impairment)
- Limits
 - Dx: no brain scans, modern tests
 - Treatment: little help



A Clinical Lesson at the Salpêtrière, by Andre Brouillet. Depicts Jean-Martin Charcot, Marie Wittman, and others.

Freud: It's About Conversion

- Let's consider Model #1: Conversion
 - FND caused by repression of memory
- Emphasizes childhood adversity
- Role of unconscious
- Challenges
 - Can you test it?
 - Is it *representative* (how well does it explain FND in people, overall?)
 - Why isn't everyone recovering?
- By 1980, FND goes down with Freudian mothership

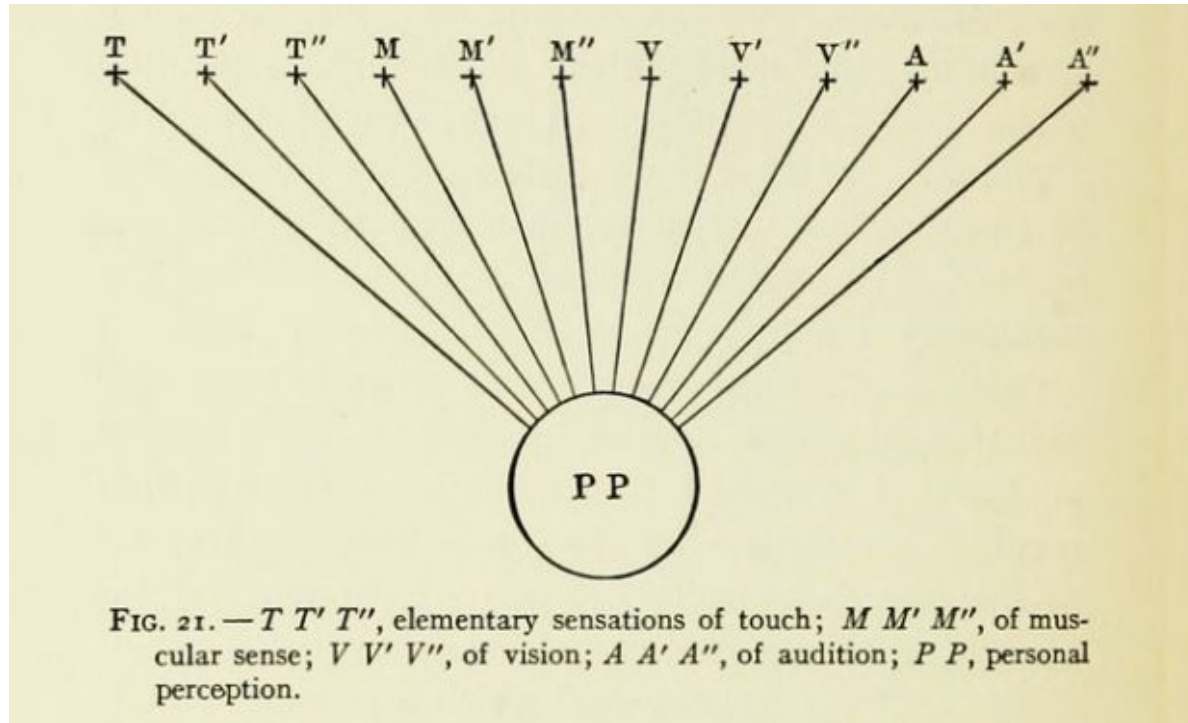


Pierre Janet: Dissociation Daddy

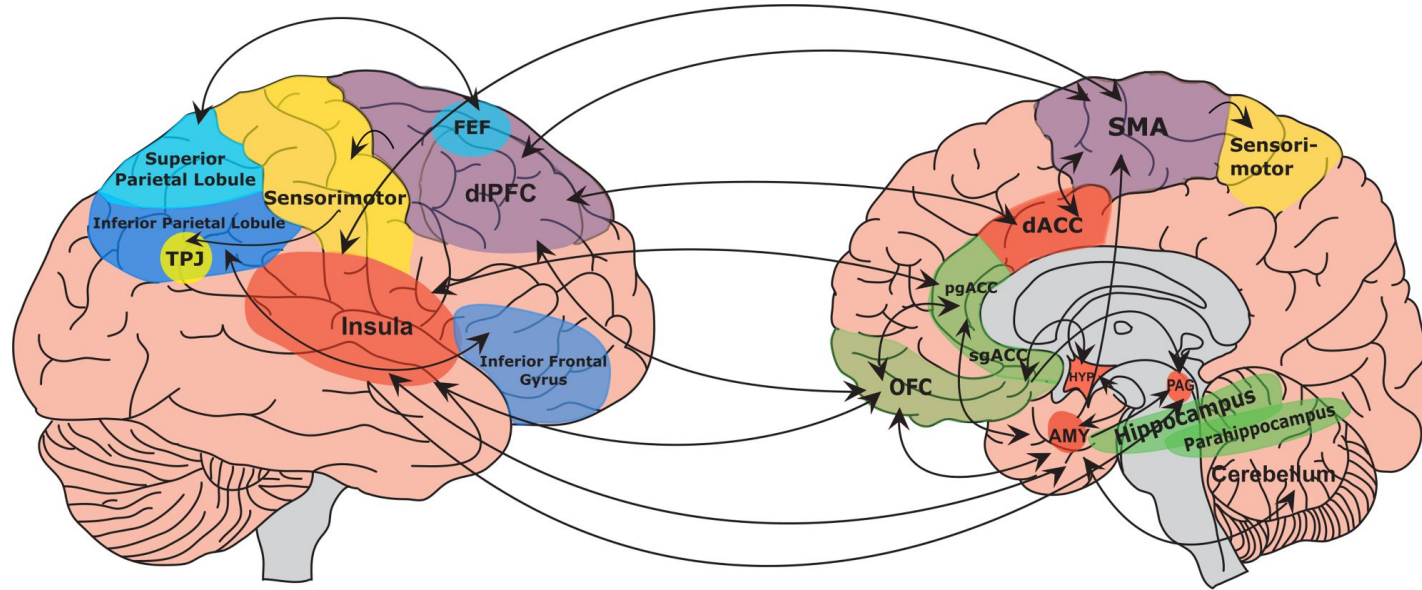
- *Dissociation* theory of FND
 - “Retraction of the field of consciousness”
- People with FND have trouble integrating brain capacities
 - Limbs can still work when attention is directed elsewhere
- “The consciousness ... is split off, dissociated from the rest of the subject's mind.”
 - William James, on Janet



Consciousness is a Group Chat



From Janet, "The Major Symptoms of Hysteria", 1907

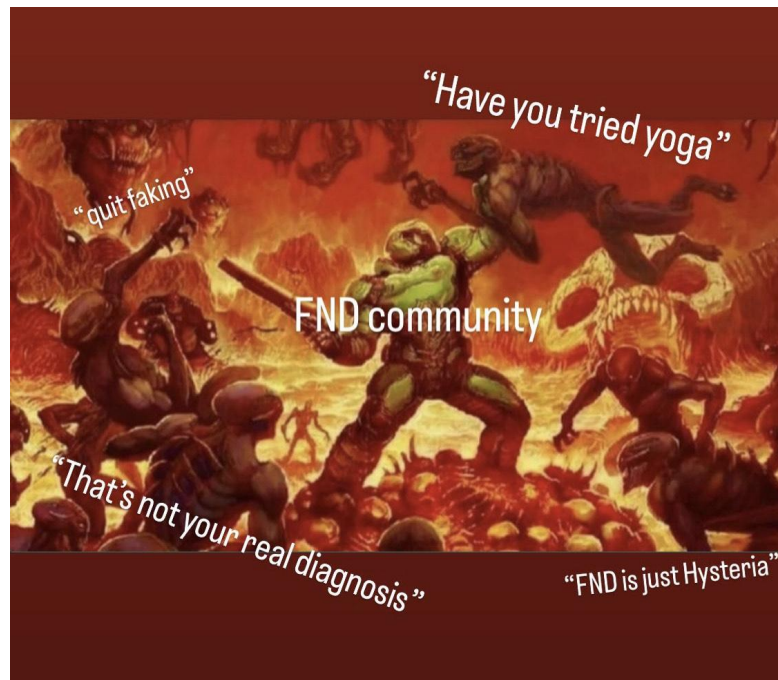


- Sensorimotor & TPJ networks: deficits in motor execution and feedforward signaling leading to impaired self-agency
- Salience network: altered homeostatic balance, interoception, multimodal integration and emotional/self-awareness
- Limbic network: impaired emotion regulation, fear extinction, value-based viscerosomatic processing
- Dorsal attention network: altered goal-directed attentional mechanisms
- Ventral attention network: altered stimulus-driven attentional mechanisms
- Cognitive control and motor planning networks: motor planning deficits

Drane et al. 2020, A Framework for Understanding the Pathophysiology of Functional Neurological Disorder

Present Challenges

- Medical framing of disease
 - “Stuff that shouldn't be there”
 - “Broken parts”
 - Not structure? It’s not “physical” (real)
 - This kind of implies a belief that the body works by magic.
- Stigma against mental illness: BIG.
- Lack of training >> lack of dx >> lack of rep >> lack of social respect



A Future History of FND (social)

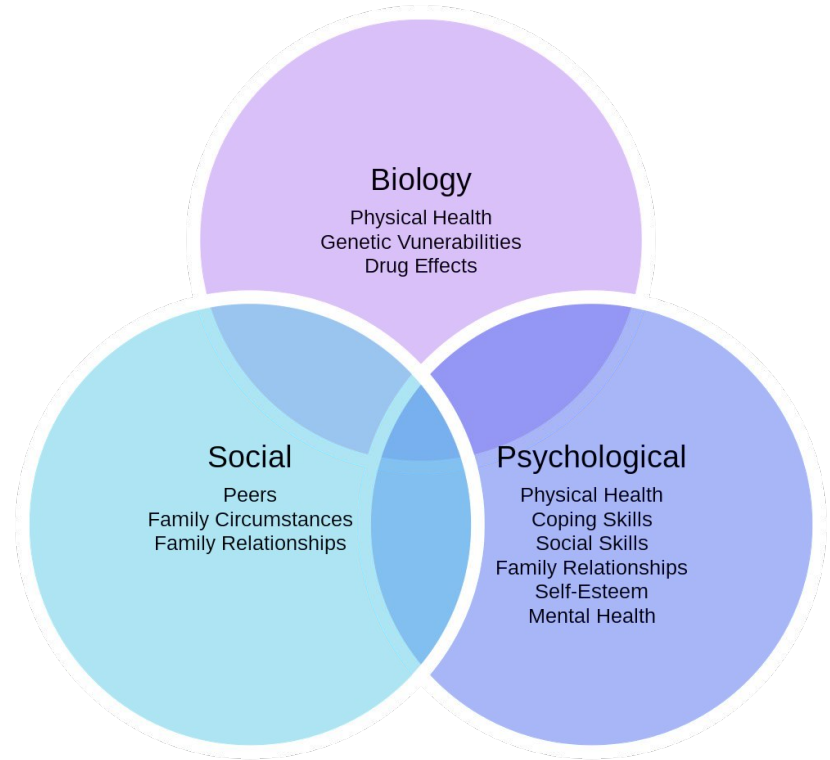
- What's different about today? **We are.**
- Historically, people with FND silenced
- What can we do now?
 - Transform community
 - In the body / brain
 - In society
 - Write the next chapter
 - Treatment, research, respect, justice



#THENANDNOW

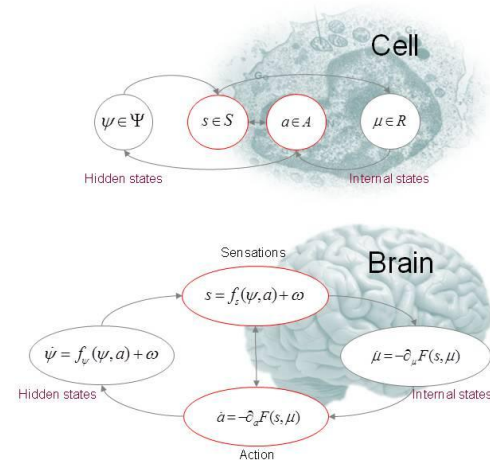
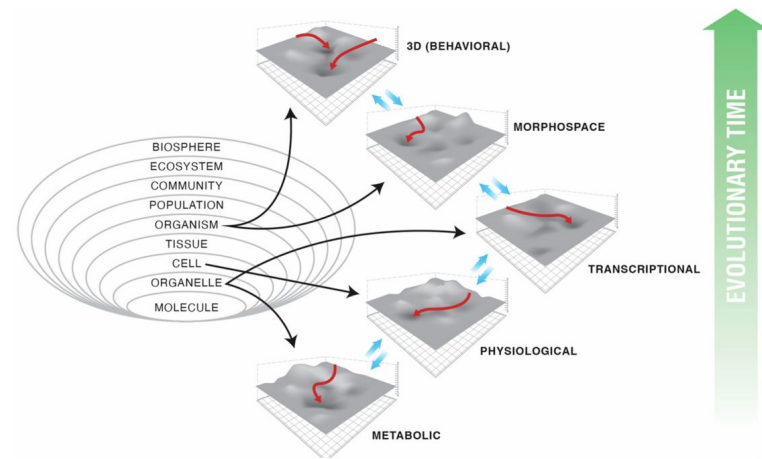
A Future History of FND (science)

- Paradigm shift: away from structure-only model
- Future medicine that looks at *function at multiple levels (forest and tree)*
 - BPS foundation



There's Levels To It

- Applying FND learnings throughout medicine
 - FND = neural dynamics
 - Neural dynamics may have counterpart in body cells
- What can we get from this?
 - Mind/body medicine: reciprocal influence (phantom limb, CIPN)
 - Entirely new ways of healing
 - Basal cognition, active inference
 - Integrate health between cells, body, mind, and society



Illustrations by Michael Levin and Karl Friston



Cadenza for Fractured Consciousness:

a Personal History
of the World's Most
Misunderstood
Illness

Twitter, Insta, Bluesky: @fndportal

Thank you! ❤️

