

**Beyond Physicalism –  
Looking at the World with Fresh Eyes**

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# Disclosures

I have a financial interest, and hold an executive position, at *Intrinsic Powers, Inc.*, a company whose purpose is to develop a device to assess the presence of consciousness in behaviorally unresponsive patients.

# Consciousness

Being **conscious/aware** is identical to having (subjective, phenomenological, mental, qualitative) **experiences** - being in love, in pain, bored, dreading, seeing, hearing, wanting, imagining, dreaming . . .

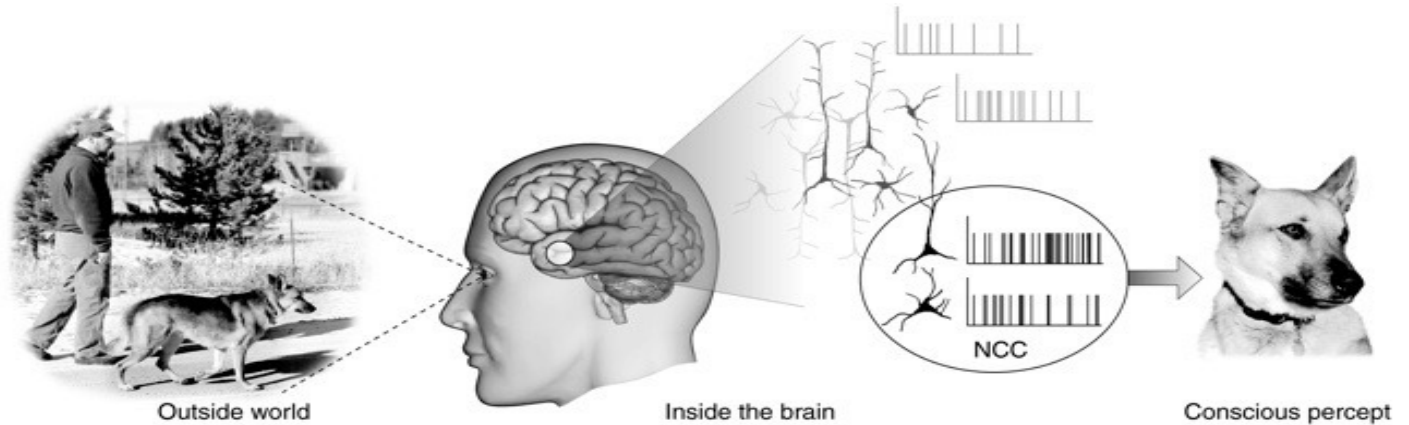
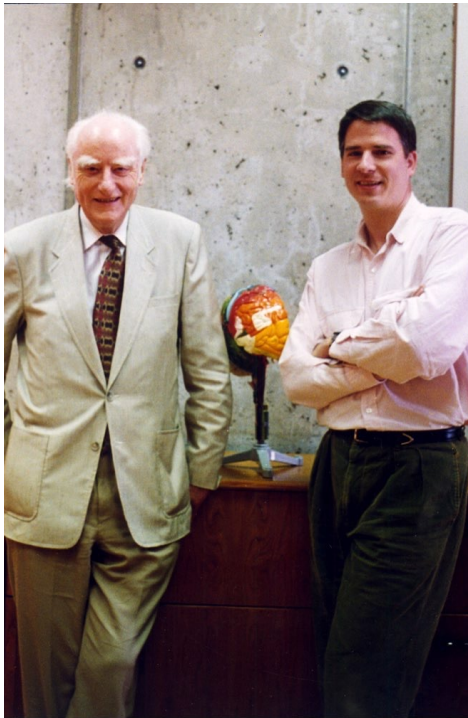
## Other Minds

- Consciousness is private and cannot be observed by others
- This is rare but not unheard of in science (wave-function, multiverse...)
- Determining consciousness in others – adults, babies, behaviorally unresponsive patients, or non-human animals – is **always** a probabilistic inference to the best explanation!

# Consciousness can be Dissociated from Behavior

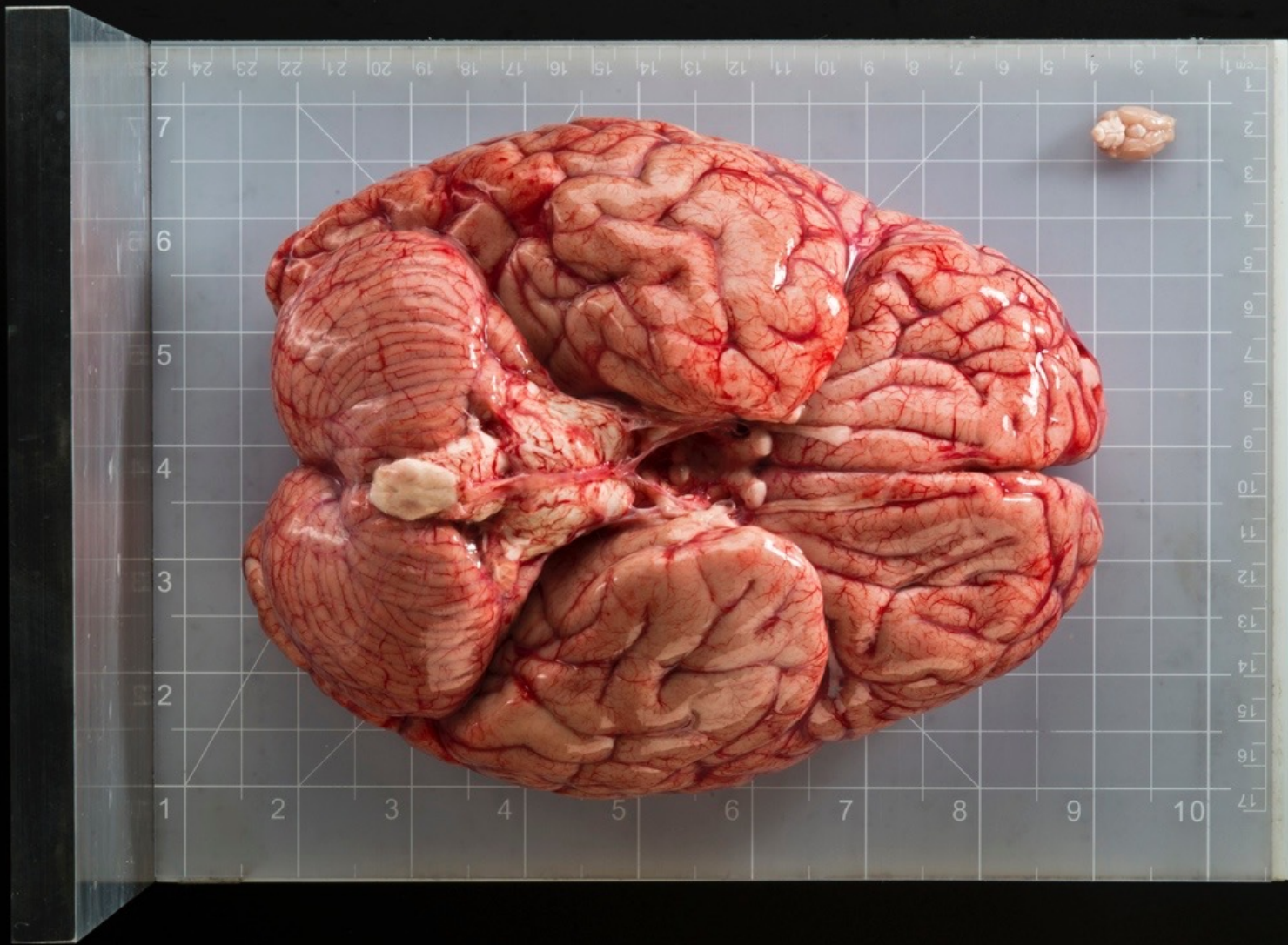
- Consciousness in humans goes hand-in-hand with speech and other voluntary behaviors
- Yet dreaming, meditating, or tripping occurs without behavior
- Furthermore, many behaviors are unconscious.

# Neural Correlates of Consciousness



Search for the minimal neuronal mechanisms jointly sufficient for any one conscious experience, the NCC. Every conscious percept has an NCC. Inducing the NCC will induce the experience; inactivating the NCC will eliminate the experience.

Crick & Koch, *Nature* 1995; Chalmers, 2000




# Adversarial testing of global neuronal workspace and integrated information theories of consciousness

<https://doi.org/10.1038/s41586-025-08888-1>

Cogitate Consortium\*

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 Check for updates

Different theories explain how subjective experience arises from brain activity<sup>1,2</sup>. These theories have independently accrued evidence, but have not been directly compared<sup>3</sup>. Here we present an open science adversarial collaboration directly juxtaposing the integrated information theory (IIT)<sup>4,5</sup> and the global neuronal workspace theory (GNWT)<sup>6–10</sup>, via a theory-neutral consortium<sup>11–13</sup>. The theory proponents and the consortium developed and preregistered the experimental design, divergent predictions, expected outcomes and interpretation thereof<sup>12</sup>. Human participants ( $n = 256$ ) viewed suprathreshold stimuli for variable durations while neural activity was measured with functional magnetic resonance imaging, magnetoencephalography and intracranial electroencephalography. We found information about conscious content in visual, ventrottemporal and inferior frontal cortex, with sustained responses in occipital and lateral temporal cortex reflecting stimulus duration, and content-specific synchronization between frontal and early visual areas. These results align with some predictions of IIT and GNWT, while substantially challenging key tenets of both theories. For the IIT, a lack of sustained synchronization within the posterior cortex contradicts the claim that network connectivity specifies consciousness. The GNWT is challenged by the general lack of ignition at stimulus offset and limited representation of certain conscious dimensions in the prefrontal cortex. These challenges extend to other theories of consciousness that share some of the predictions tested here<sup>14–17</sup>. Beyond challenging the theories, we present an alternative approach to advance cognitive neuroscience through principled, theory-driven, collaborative research and highlight the need for a quantitative framework for systematic theory testing and building.

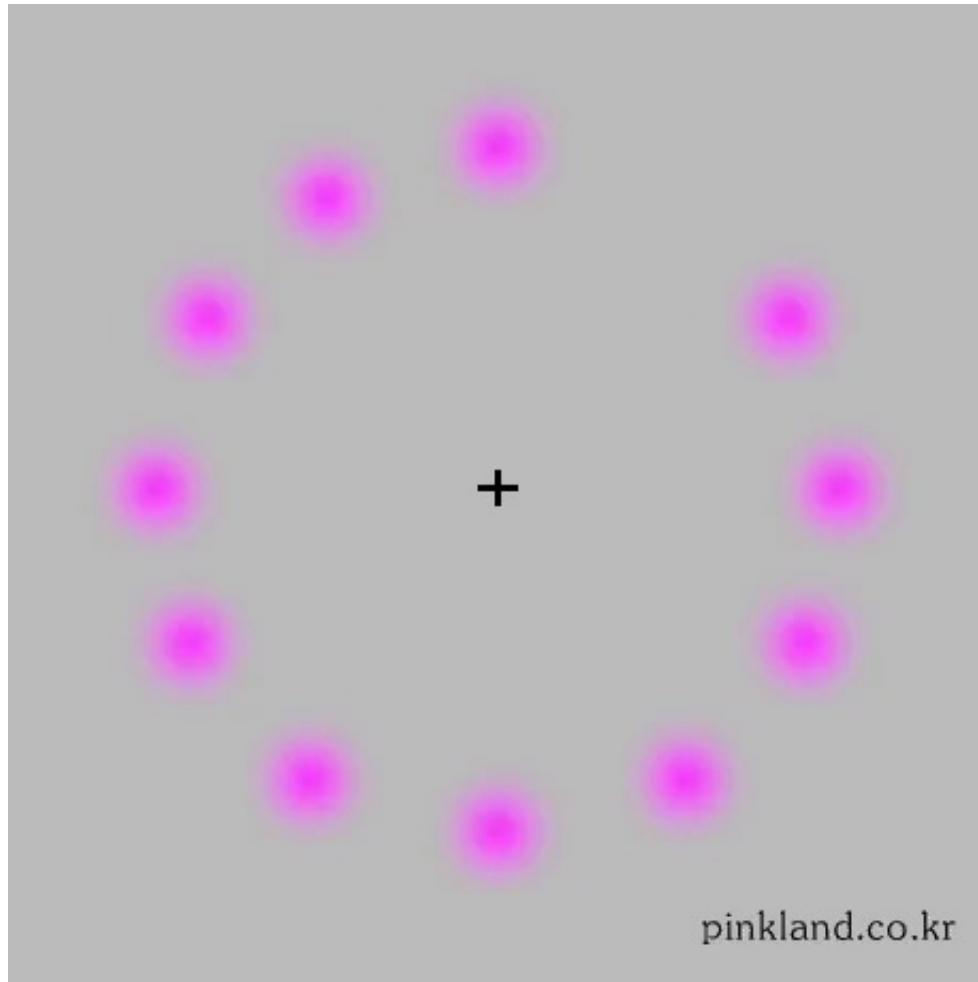
## Covert Consciousness

Detecting consciousness at the bedside for an estimated one million patients each year worldwide



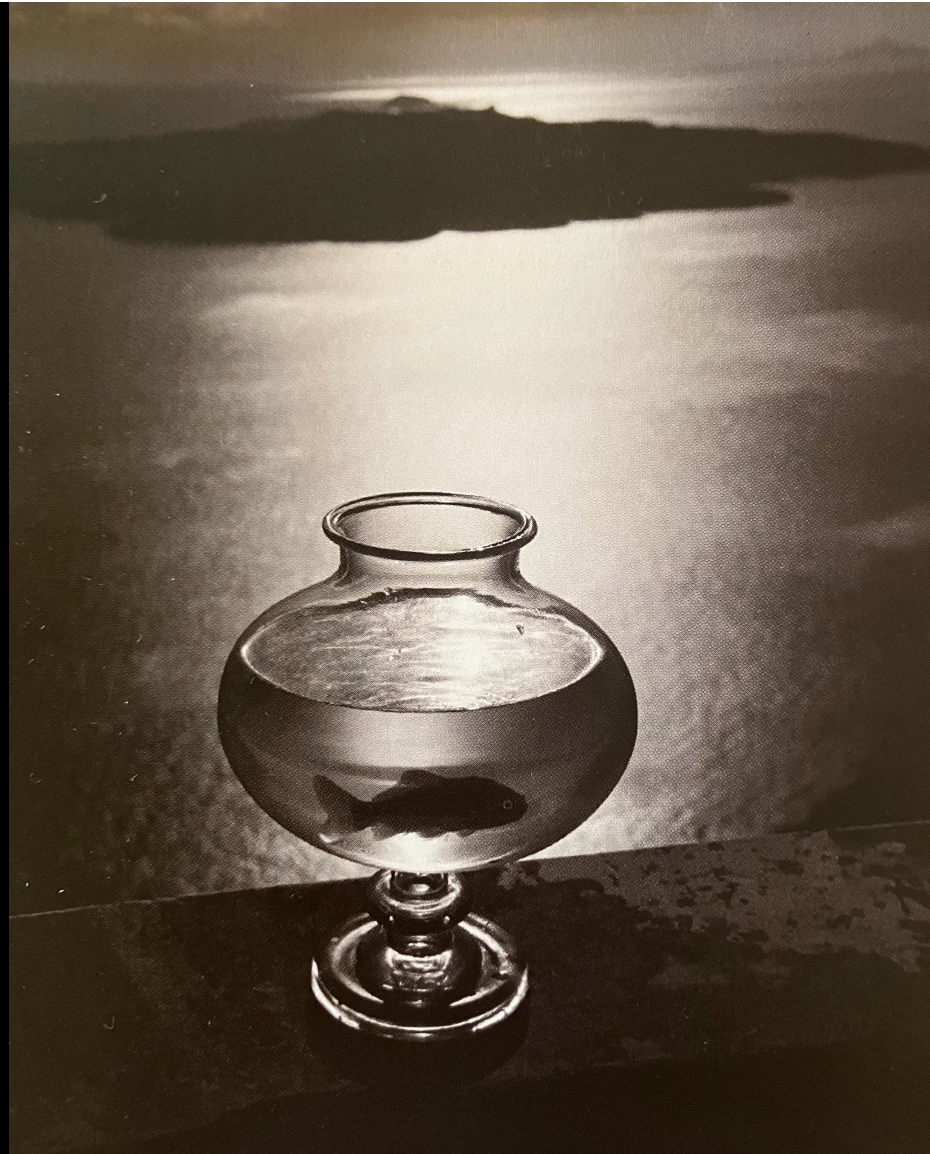
Withdrawal of life-sustaining treatment in these behavioral unresponsive patients is the most common cause of death, even though many are conscious.

# We Do Not See What is 'Out There'



# We All Experience Our Own Reality





# Physicalism aka Materialism

- Everything that exists can be defined in terms of *quantitative* variables
- The evolution of the world can be fully described by *natural* laws acting upon these variables
- Ancient form of monism: “Atoms and the void” of Democritus in 5<sup>th</sup> century BCE Greece
- Hegemonic metaphysical assumption in Academe, Big Tech, and media, as the natural sciences have proven extraordinarily successful at explaining many aspects of the world
- Science & technology are vastly more effective at predicting and manipulating the world than any religious or traditional view
- → quantum computers, mRNA vaccines, AI but also nuclear warfare, climate crisis, world-wide anomie
- Consciousness will ultimately succumb to a purely physical explanation!

# The Challenges of Physicalism

- It has failed to explain how consciousness emerges out of three pounds of active matter
- In response, many analytic philosophers either marginalize or completely deny consciousness, gaslighting us into believing that the sound and fury of life are phantasmagoria (illusionism, eliminative materialism, fictionalism, and instrumentalism)
- Others postulate that a future physics will explain consciousness. This is a promissory note that cannot be evaluated, like waiting for the eschaton
- Defining *physical* is straightforward within Classical Physics given the *definiteness* and *absoluteness of observed events* but has become increasingly difficult with Quantum Mechanics, starting with superposition and the measurement problem (e.g., *Schrödinger's cat*)
- Quantum entanglement has further challenged our notions of the physical and we are abandoning *locality* and possibly even the *absoluteness of observed events*!



The person who is involved in this perception is no longer an individual, for in such perception the individual has lost himself; he is pure will-less, painless, timeless subject of knowledge.

Arthur Schopenhauer  
*The World as Will and Representation* 1818

# Advaita Vedanta



Widespread teaching in the **Upanishads**, capturing the essence of **Advaita** (non-duality)

*When a man realizes  
He is neither the doer nor the enjoyer,  
The ripples of his mind are stilled*

Ashtavakra Gita

# Religious Conversion Experiences



The Pauline Conversion on the Road to Damascus  
from Saul to St. Paul, in the *New Testament*

See also Hildegard of Bingen, Julian of Norwich, St.  
Teresa of Avila, Joan of Arc, Meister Eckhart, Blaise  
Pascal, Rumi, Khalil Gibran

# Mystical Experiences

- Brief unexpected experiences that can lead to permanent changes in attitude, goals, beliefs and habits – loss of fear of death, anxiety and cynicism; detachment from material possessions; an orientation toward the greater good
- There is a distinct before and after for the rest of life
- ‘Awakening’ into a new reality
- Rare, transient, not under volitional control (“an act of unearned grace” per A. Huxley), ineffable, noetic quality
- Can occur during near-death episodes, meditation, psychedelics, listening to music, experiencing nature, seeing planet Earth (overview effect) ...
- Can occur in children or adults of different cultures, religions and non-believers.

William James, *The Varieties of Religious Experience* 1902

# Phenomenology of Mystical Experiences

- Noetic quality
- Internal and external unity (oneness/interconnectedness)
- Transcendence of space and time
- Ineffability
- Sense of sacredness
- Loss of self
- Deeply felt positive mood

WT Stace *Mysticism and Philosophy* 1960

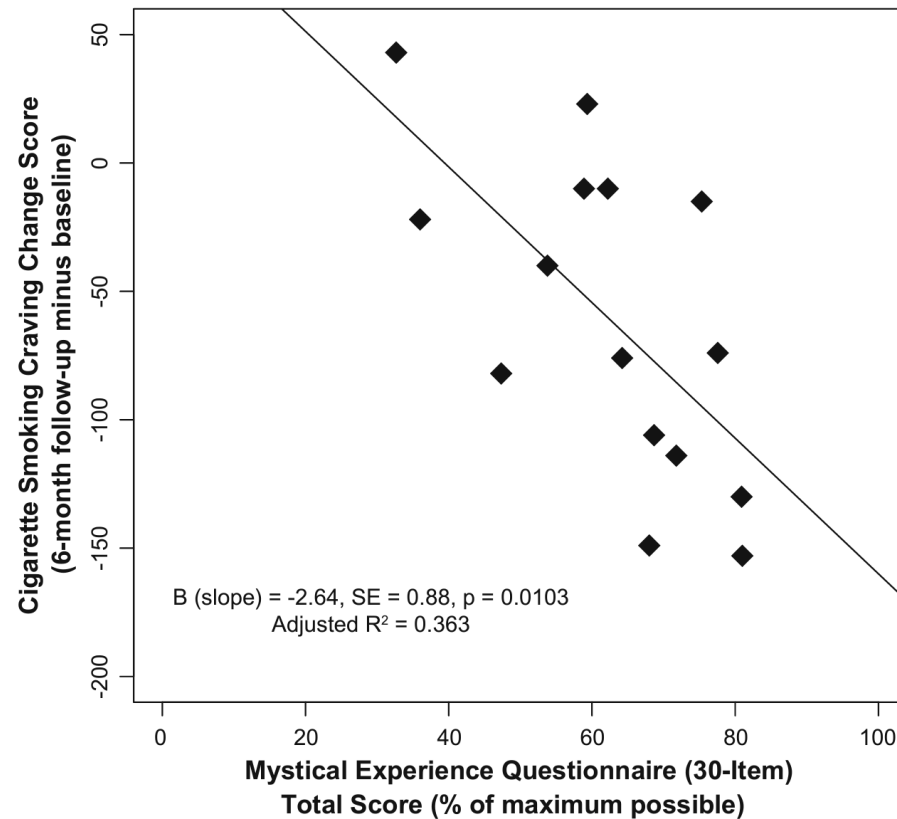
Barrett, Johnson & Griffith, J. *Psychopharmacol.* 2015

# What Can We Learn from Mystical Experiences?

- *New knowledge of old facts*
  - The startling beauty of the natural world
  - The unexplained miracle of existence
- *Knowledge by acquaintance*
  - The self, space and time are constructs of the mind
  - Encountering an ultimate phenomenal reality!

# Mystical Experience and Therapeutic Efficiency

Mystical Experience on Session Days Predicts Change in Smoking Craving Score at 6 months



Barrett & Griffith, 2018

# Reappraising Idealism

- *Transcendental idealism* (Arthur Schopenhauer) and/or *analytic idealism* (Bernardo Kastrup)
- Ultimately, only the experiential/mental/phenomenal exists
- The physical is a manifestation of the mental
- Think of it as the wave-function of the universe – expressing every possible form of existence
- Compatible with the only reality we are directly acquainted with
- The world evolves according to natural, and not-supernatural, laws
- The challenge within idealism is to explain dissociative boundaries!

## After the Ecstasy, the Laundry

- Work in physics to incorporate the subject/observer into its description of reality
- What is the brain basis of mystical experiences?
- Can mystical experience be deployed as a signpost to develop practices that take these insights into everyday life
- Practice stilling of the ego with yoga, meditation, kindness, prayer, selflessness and so on!