PANDEMIA

Dra. (c) Evelyn Cordero Roldán

Fundación Educacional Arrebol

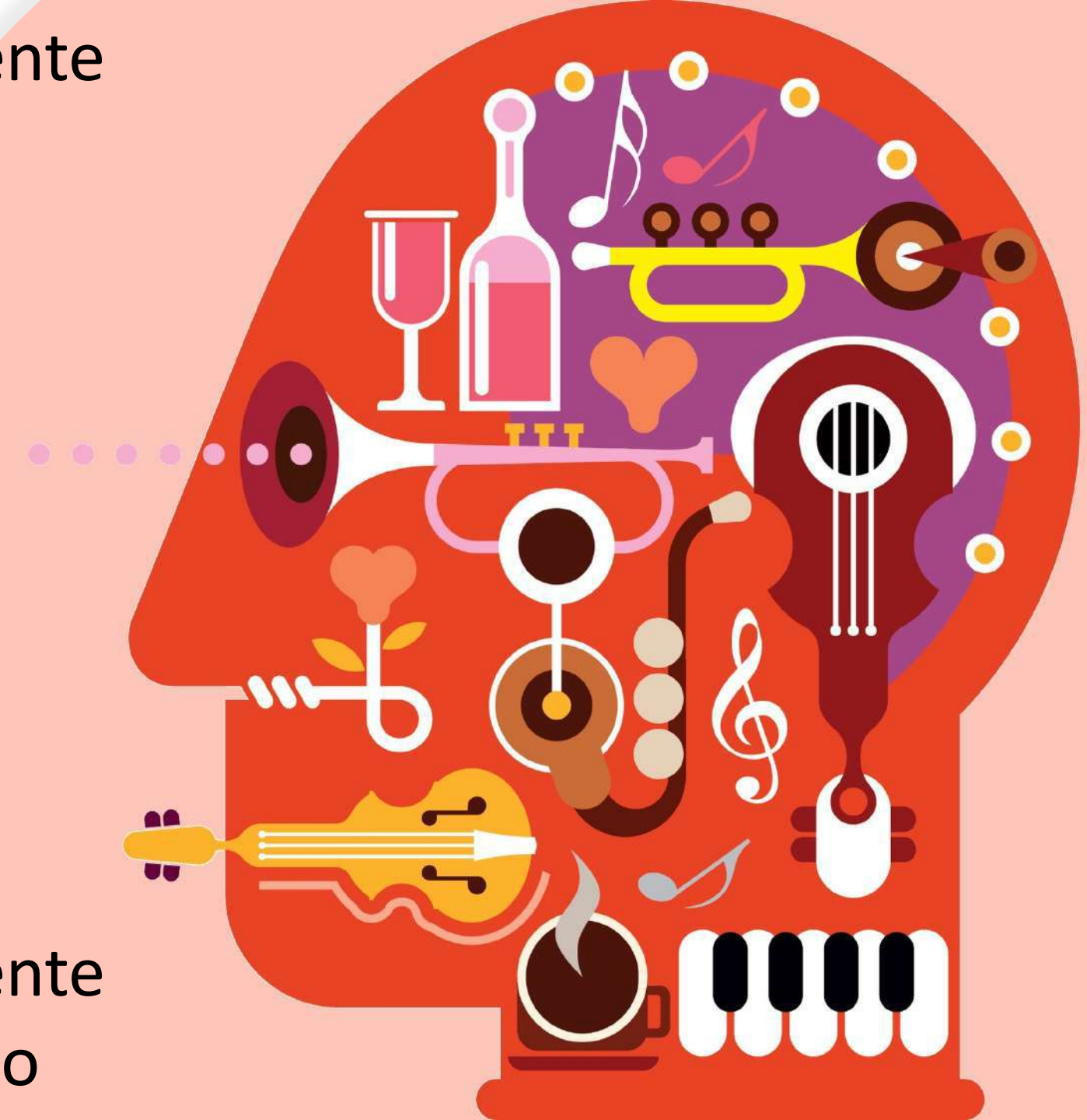
Itaú Fundación

Aprender
es
inevitable

Aprender
es
inevitable


Hello!
Salut!
Bonjour!
Hallo!
Ciao!
ПРИВЕТ!
مرحبا
नमस्ते
您好
Hi!
Salut!
Hola!
Olá!
Hi!

Biológicamente Primario

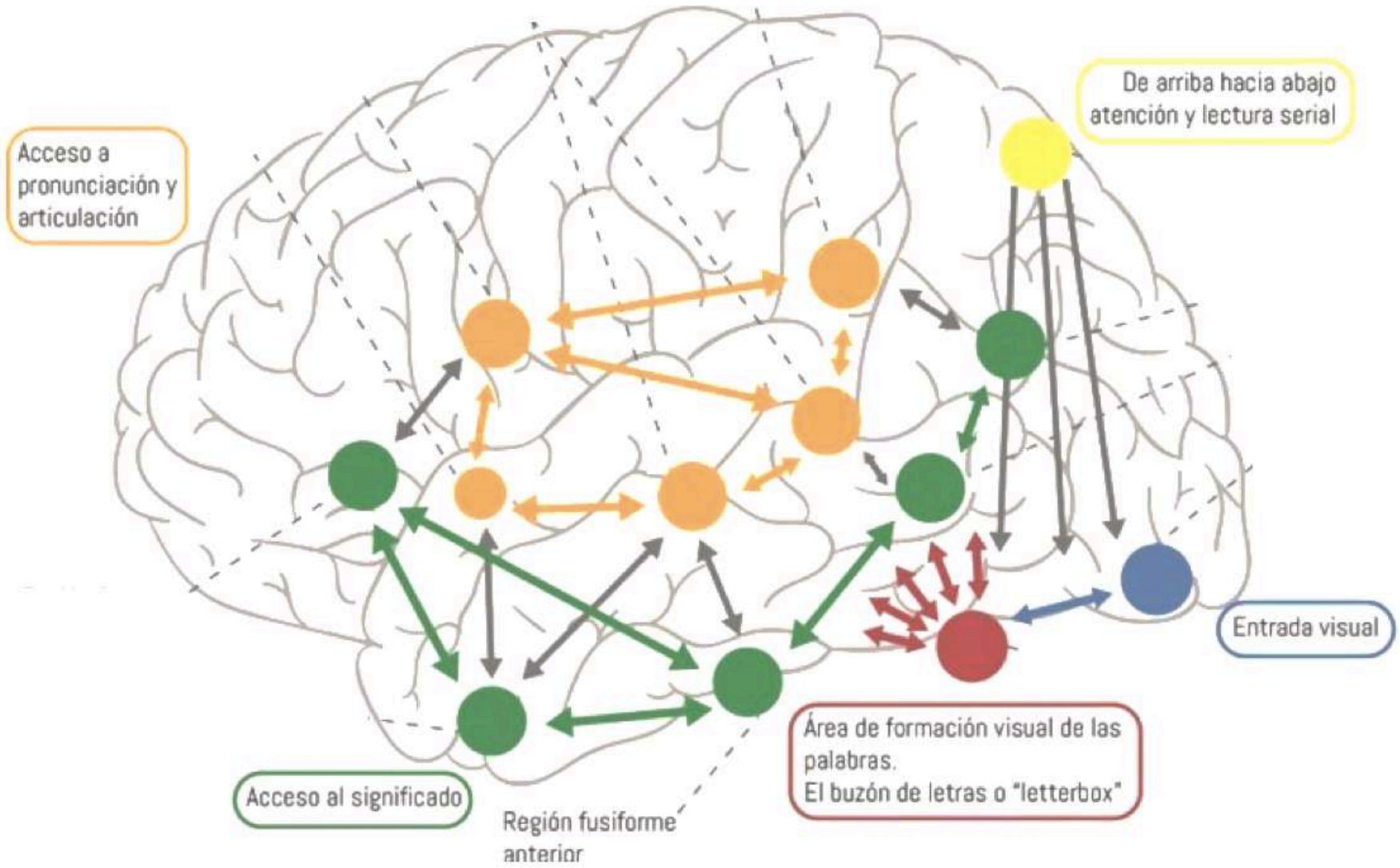


Biológicamente Secundario

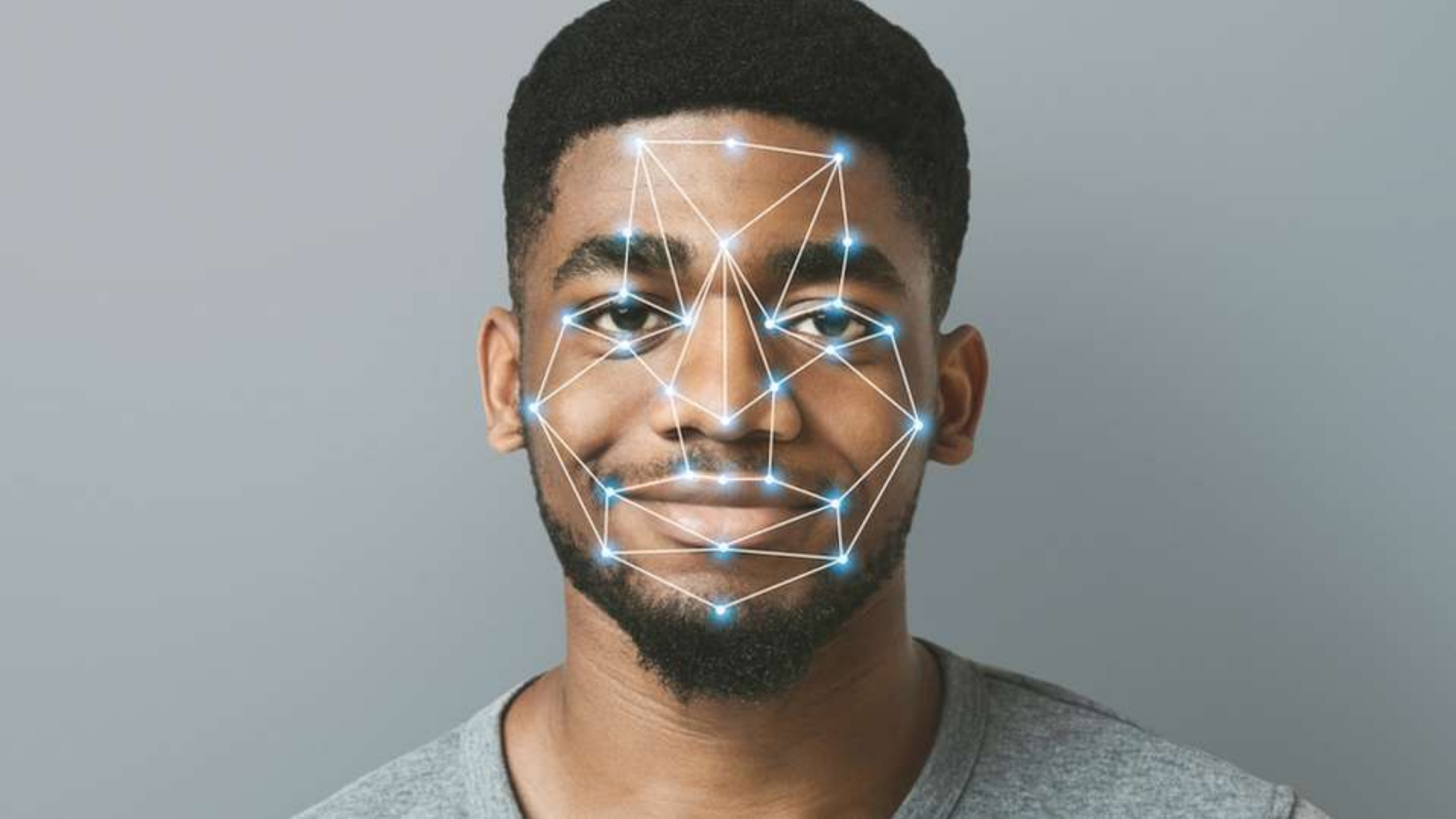
(Geary, 2007)


CULTURA

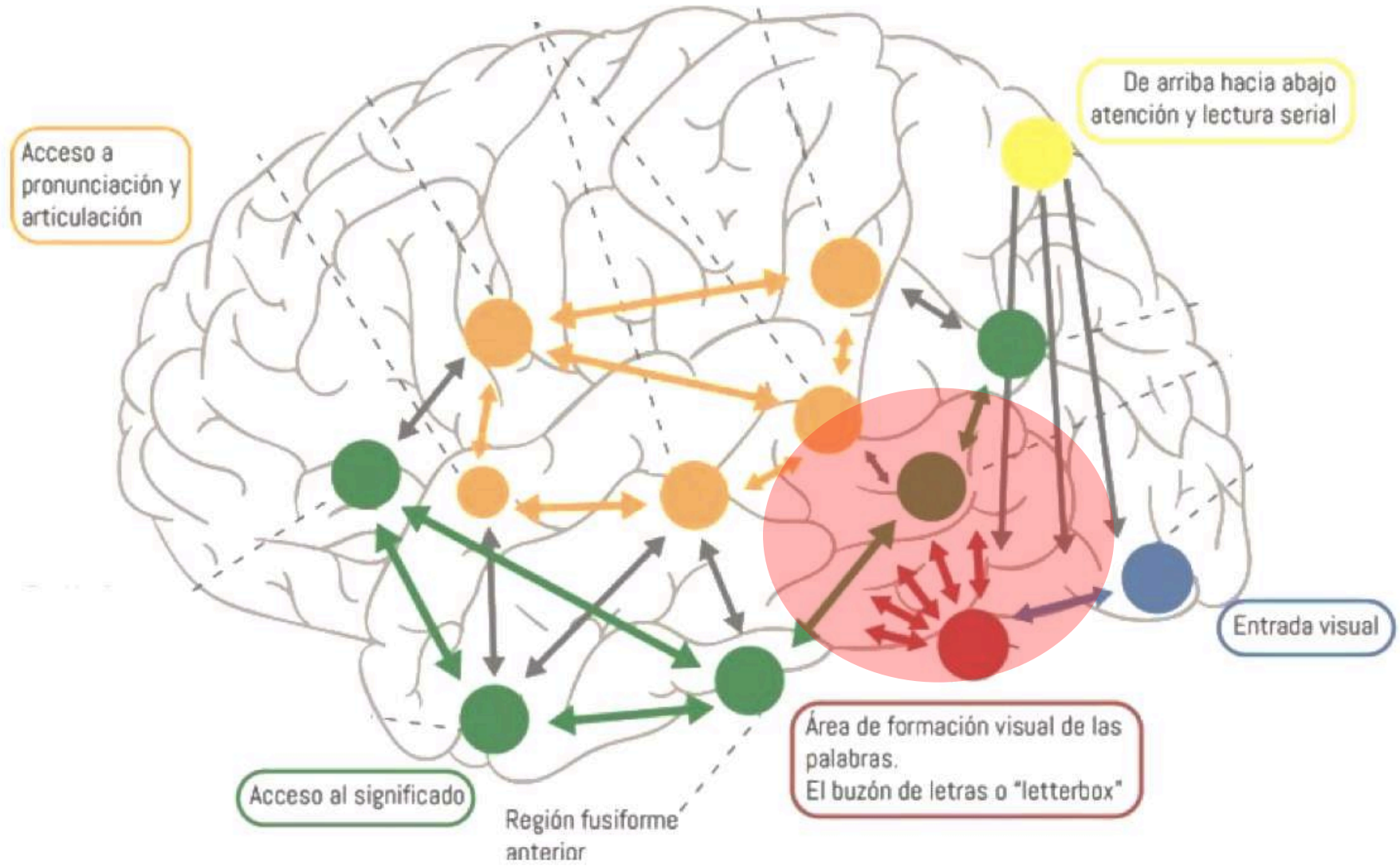
Reciclaje neuronal



(Dehaene, 2009)



Reciclaje neuronal



(Dehaene, 2009)

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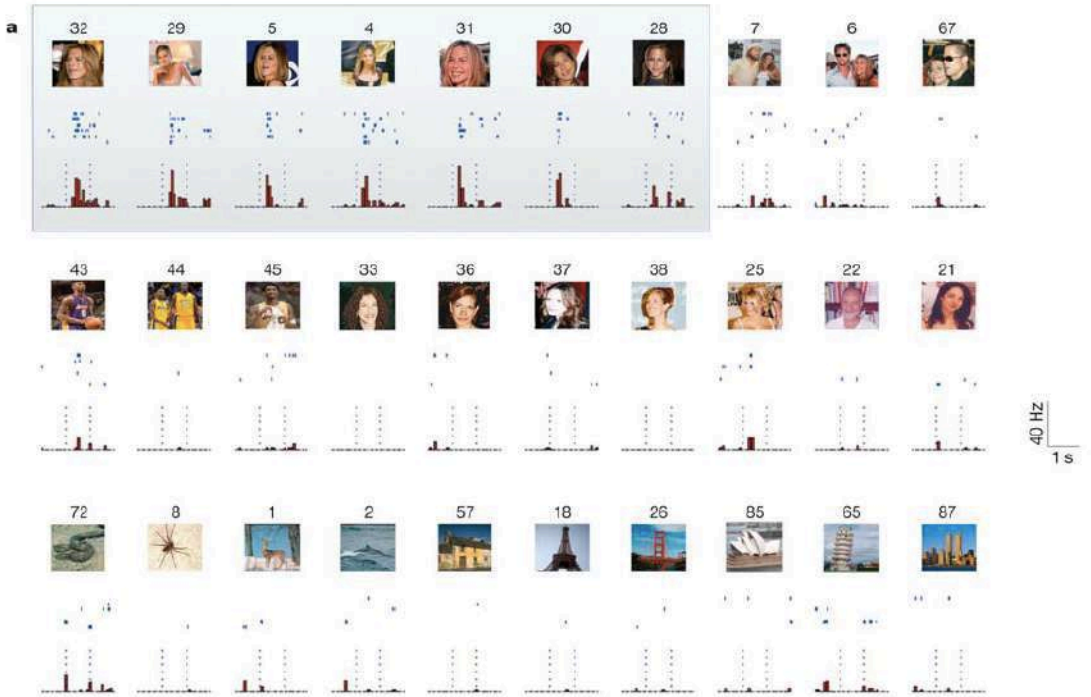

(Quiroga et al., 2005)

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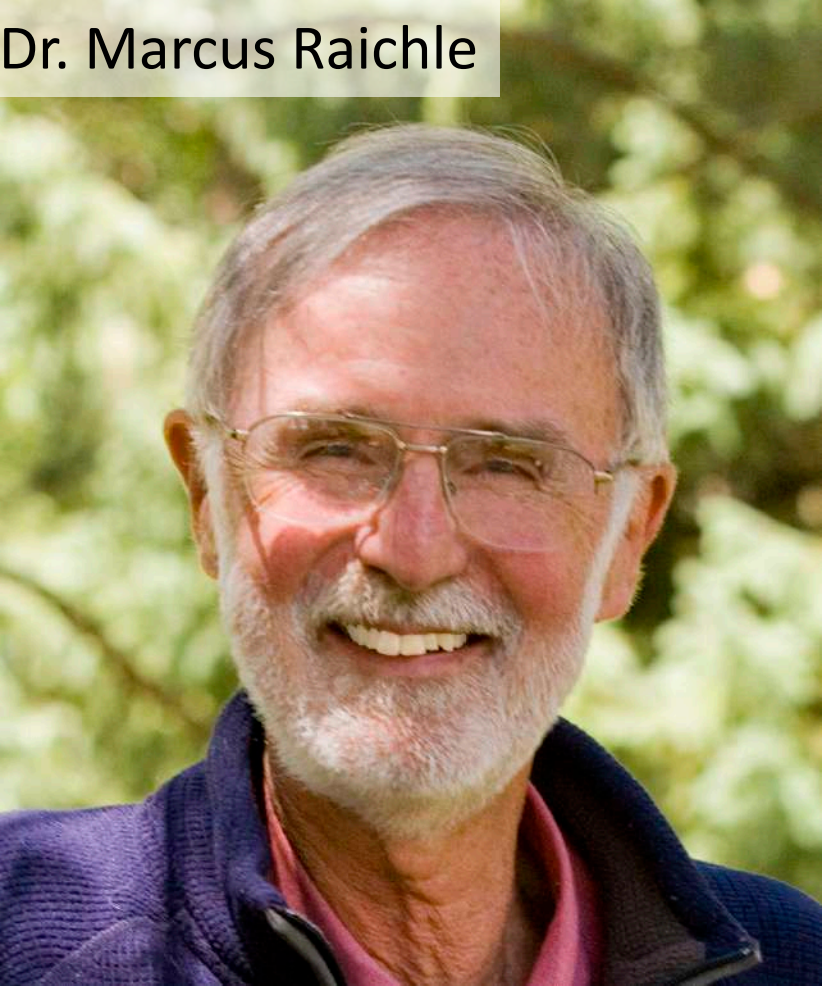
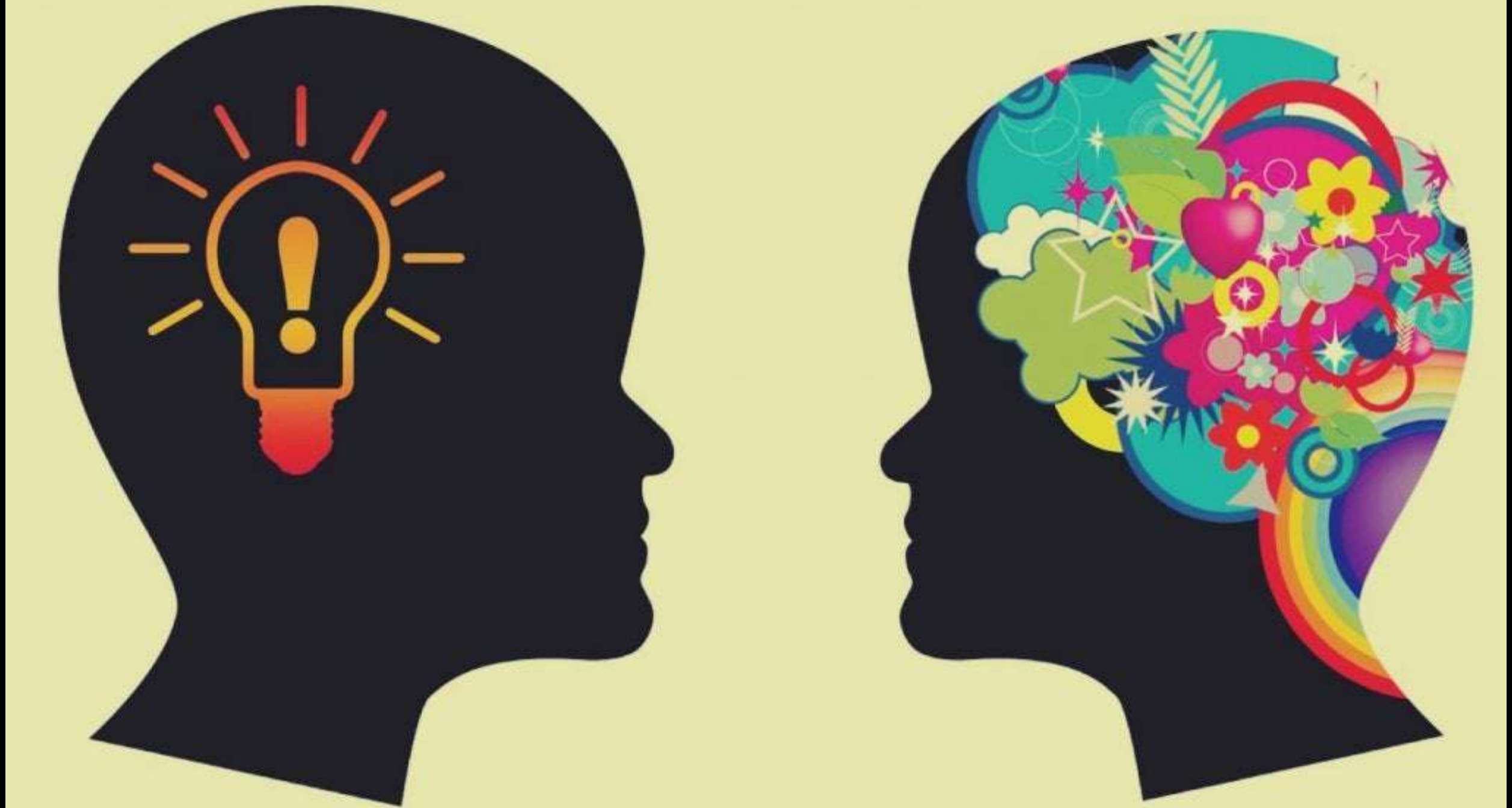
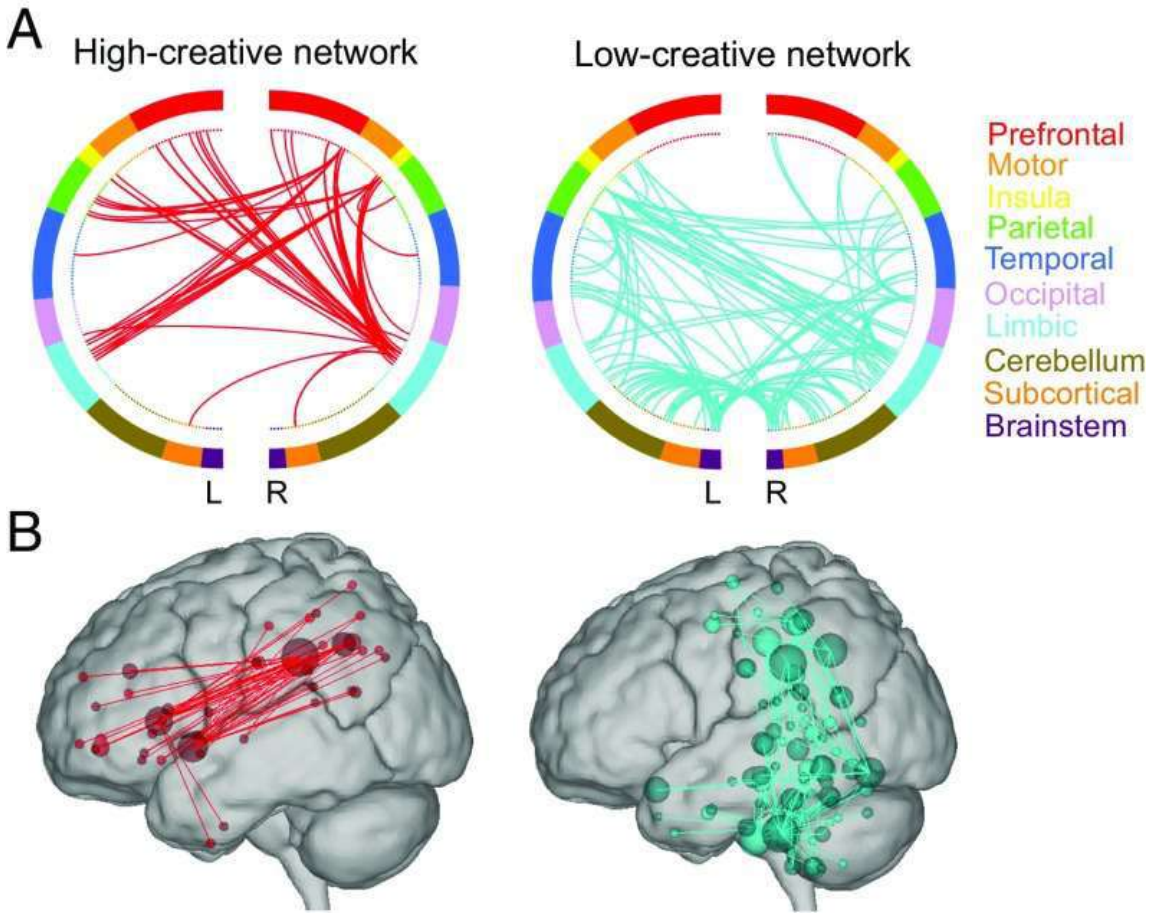
Dr. Marcus Raichle



Raichle et al. 2001





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Robust prediction of individual creative ability from brain functional connectivity

Roger E. Beaty,[a,1] Yoed N. Kenett,[b] Alexander P. Christensen,[c] Monica D. Rosenberg,[d] Mathias Benedek,[e] Qunlin Chen,[f] Andreas Fink,[e] Jiang Qiu,[f] Thomas R. Kwapil,[g] Michael J. Kane,[c] and Paul J. Silvia[c]

"las personas creativas tienen una mayor habilidad para coactivar redes neuronales que habitualmente trabajan por separado"

¿Por qué es importante la creatividad?

GLOBAL INNOVATION INDEX 2019

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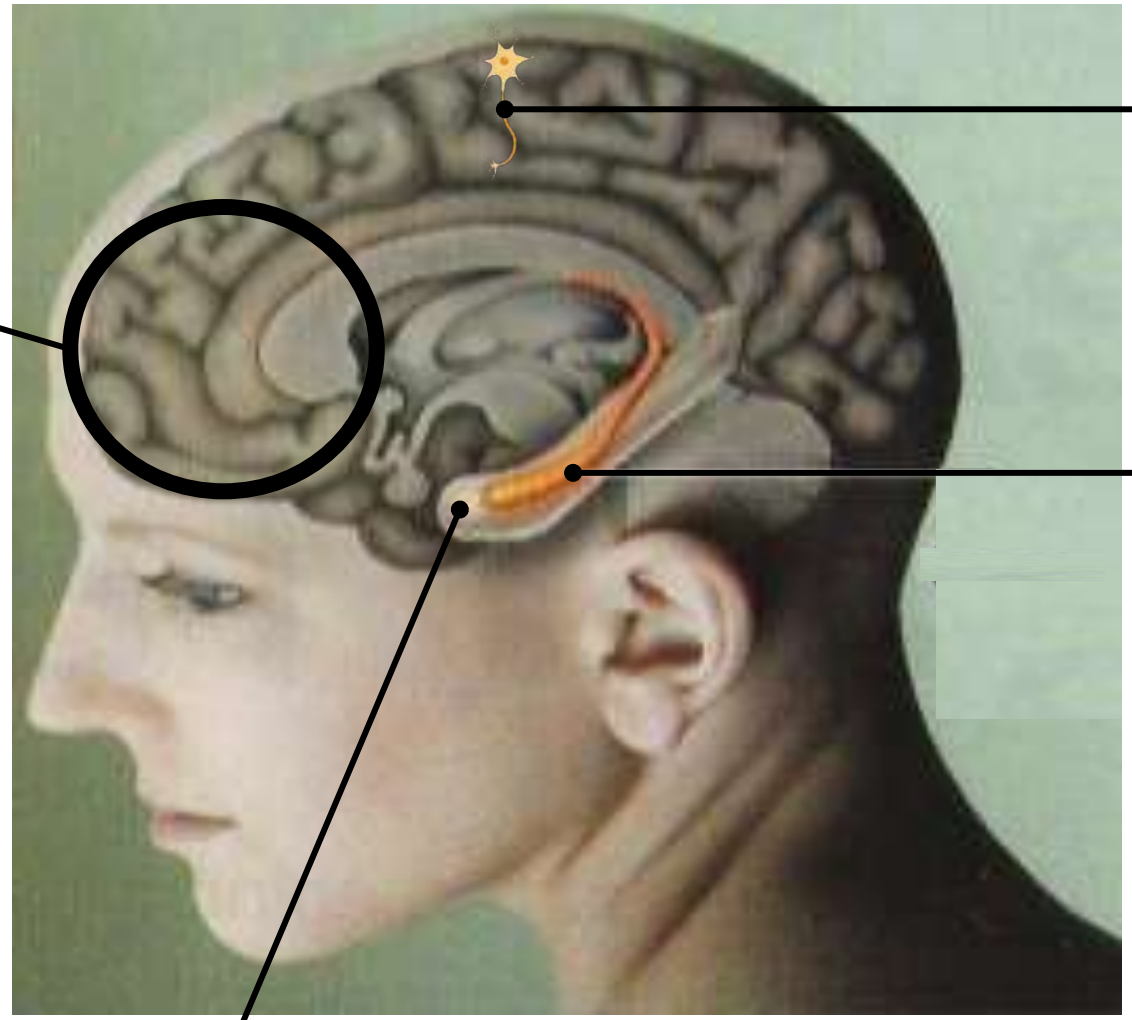
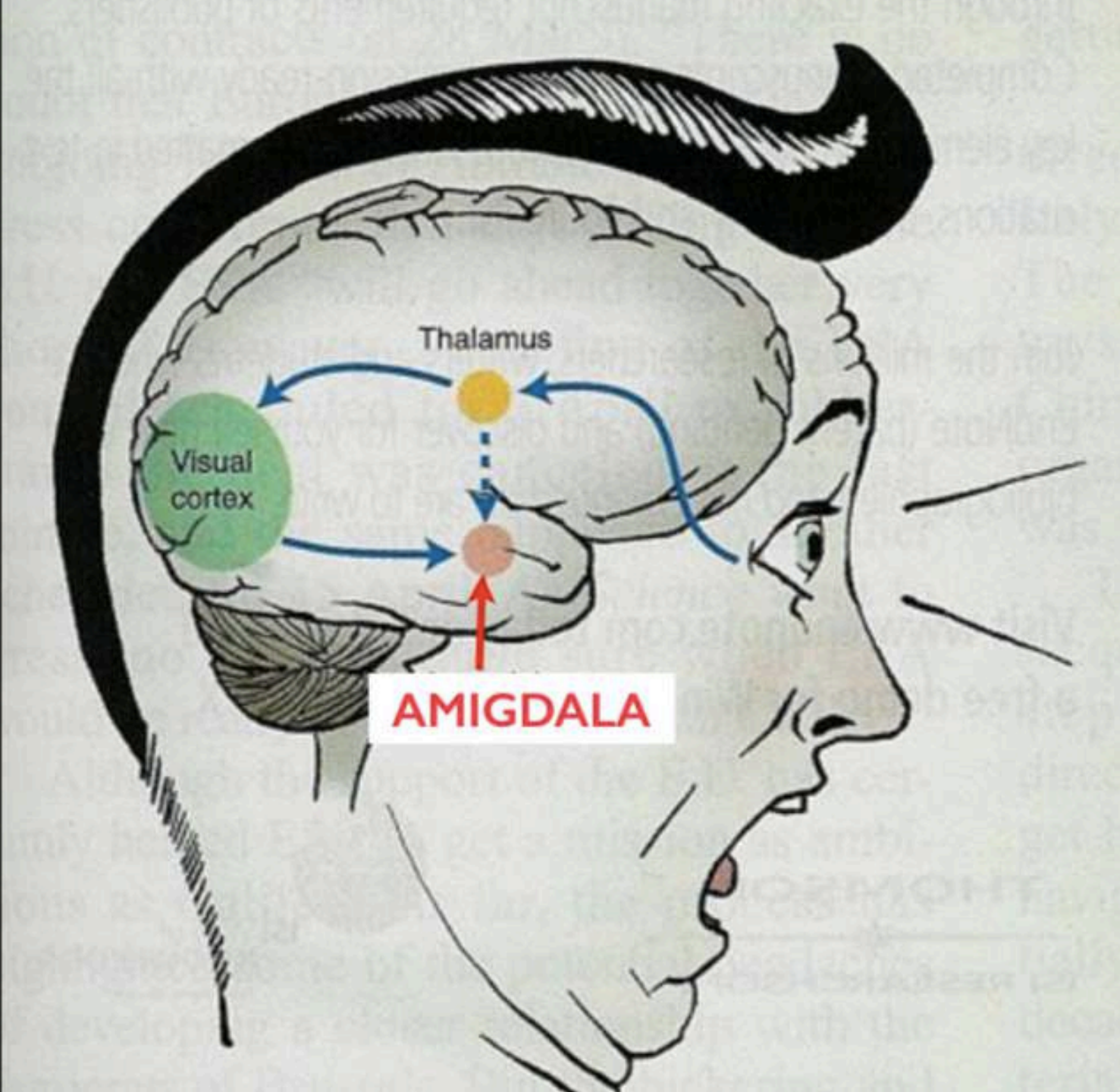
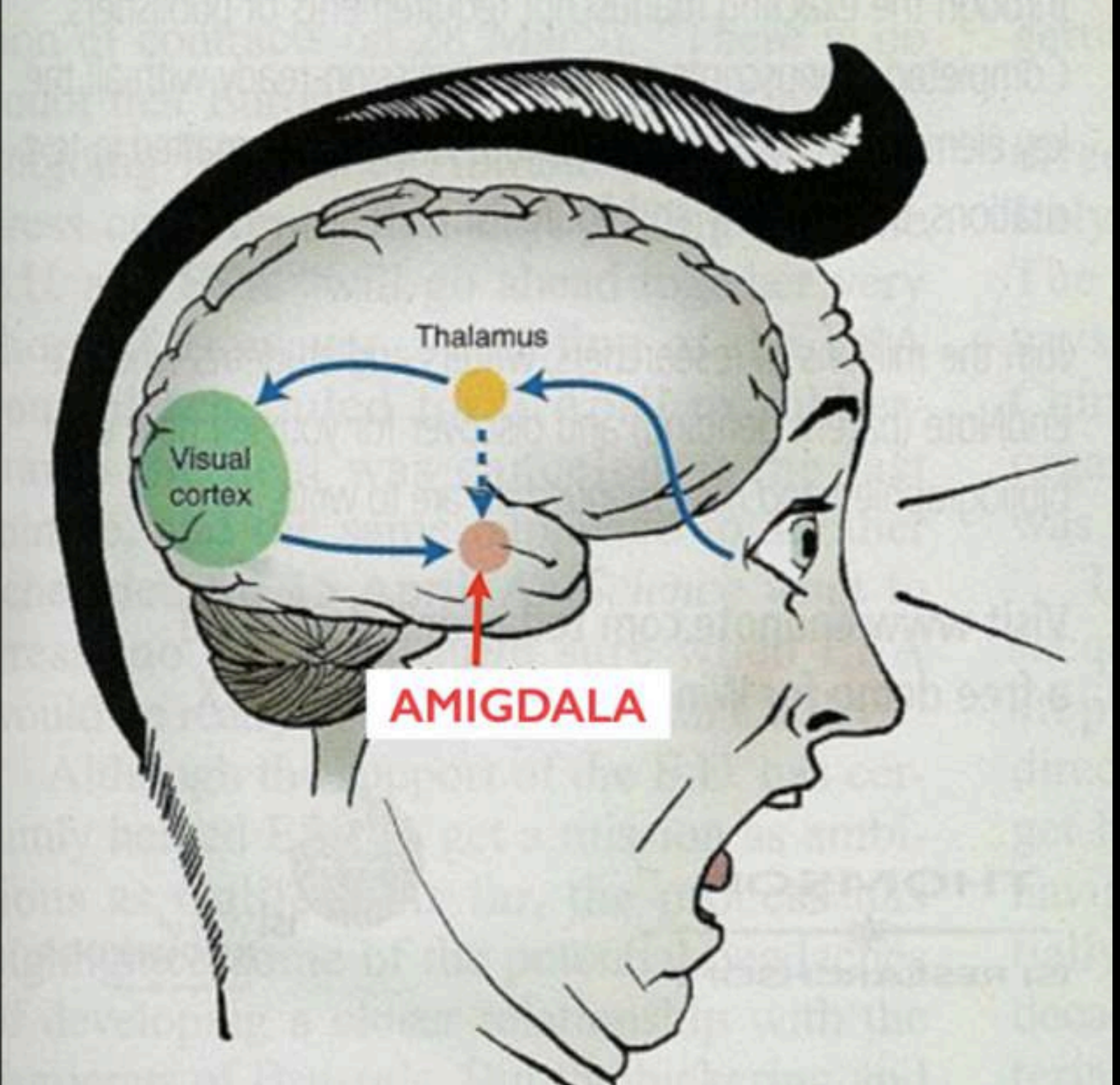
- ✓ 81 indicadores.

OPORTUNIDAD

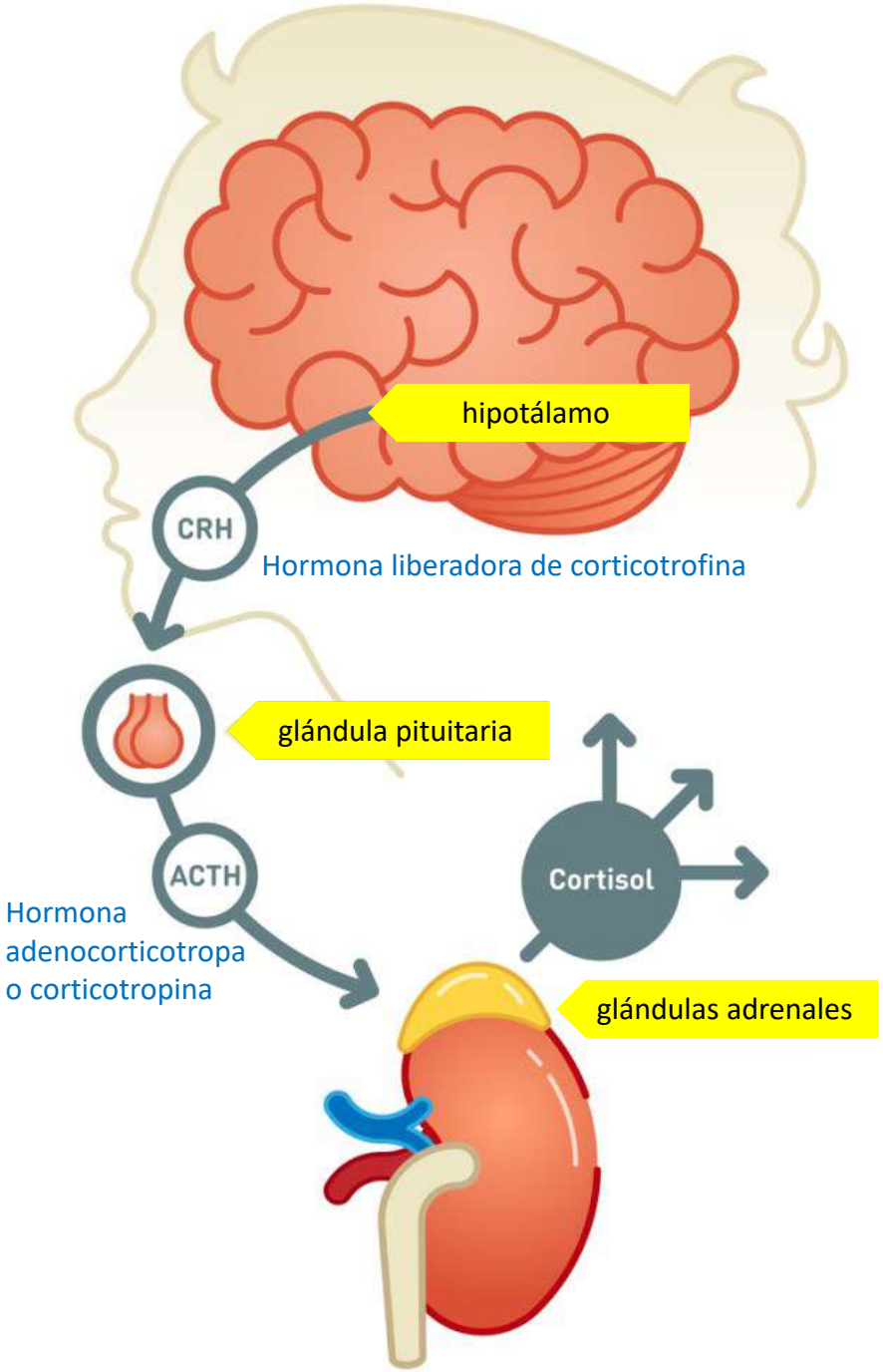

STRESS


Corteza prefrontal
(funciones ejecutivas)
Conectividad neuronal
Hipocampo
(memoria declarativa)
Amígdala
(modulación emocional)


Thalamus
Visual cortex
AMIGDALA



AMENAZA


hipotálamo
CRH
Hormona liberadora de corticotrofina
glándula pituitaria
ACTH
Hormona adenocorticotropa o corticotropina
Cortisol
glándulas adrenales

ESTO ES LO QUE PASA EN TU CUERPO BAJO ESTRÉS

Tu cerebro percibe una "amenaza"real o imaginaria

Los pulmones se llenan de aire para enviar más oxígeno

Los músculos de las extremidades se contraen preparando al cuerpo a huir o luchar

El corazón aumenta la velocidad de bombeo de sangre

Las arterias del estómago se contraen para que llegue más sangre a los músculos

El hígado libera glucosa en grandes cantidades como energía extra

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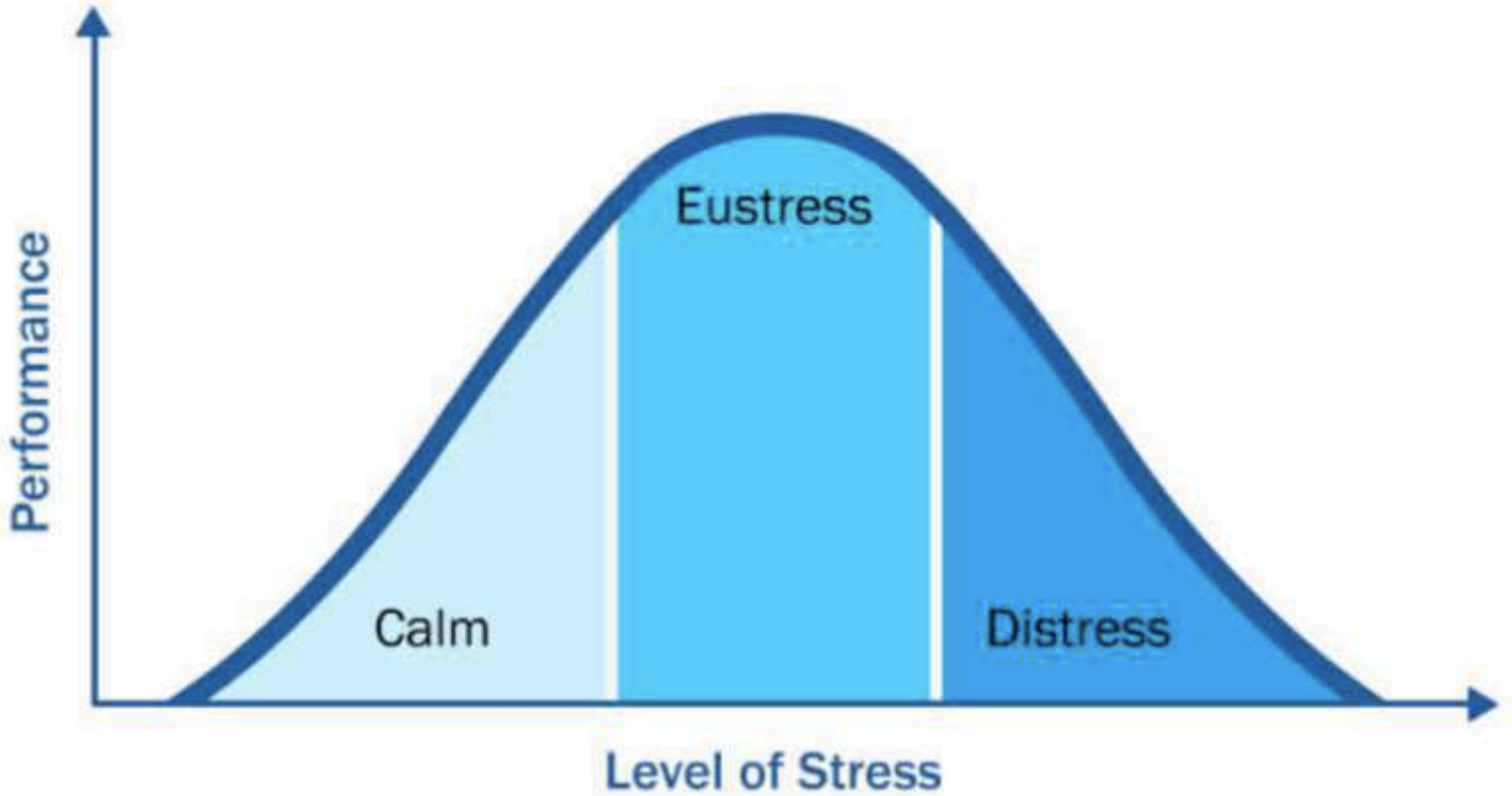
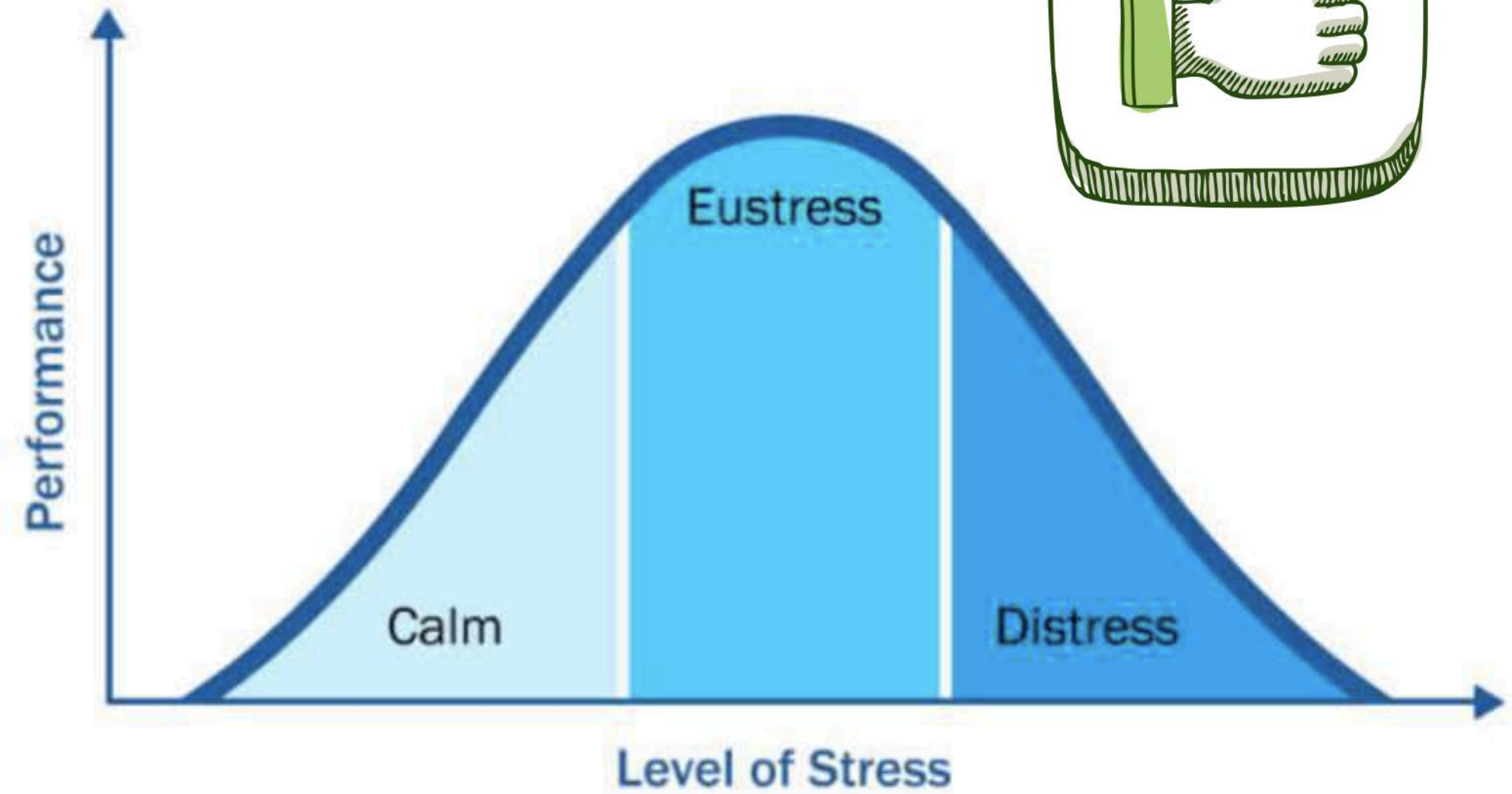


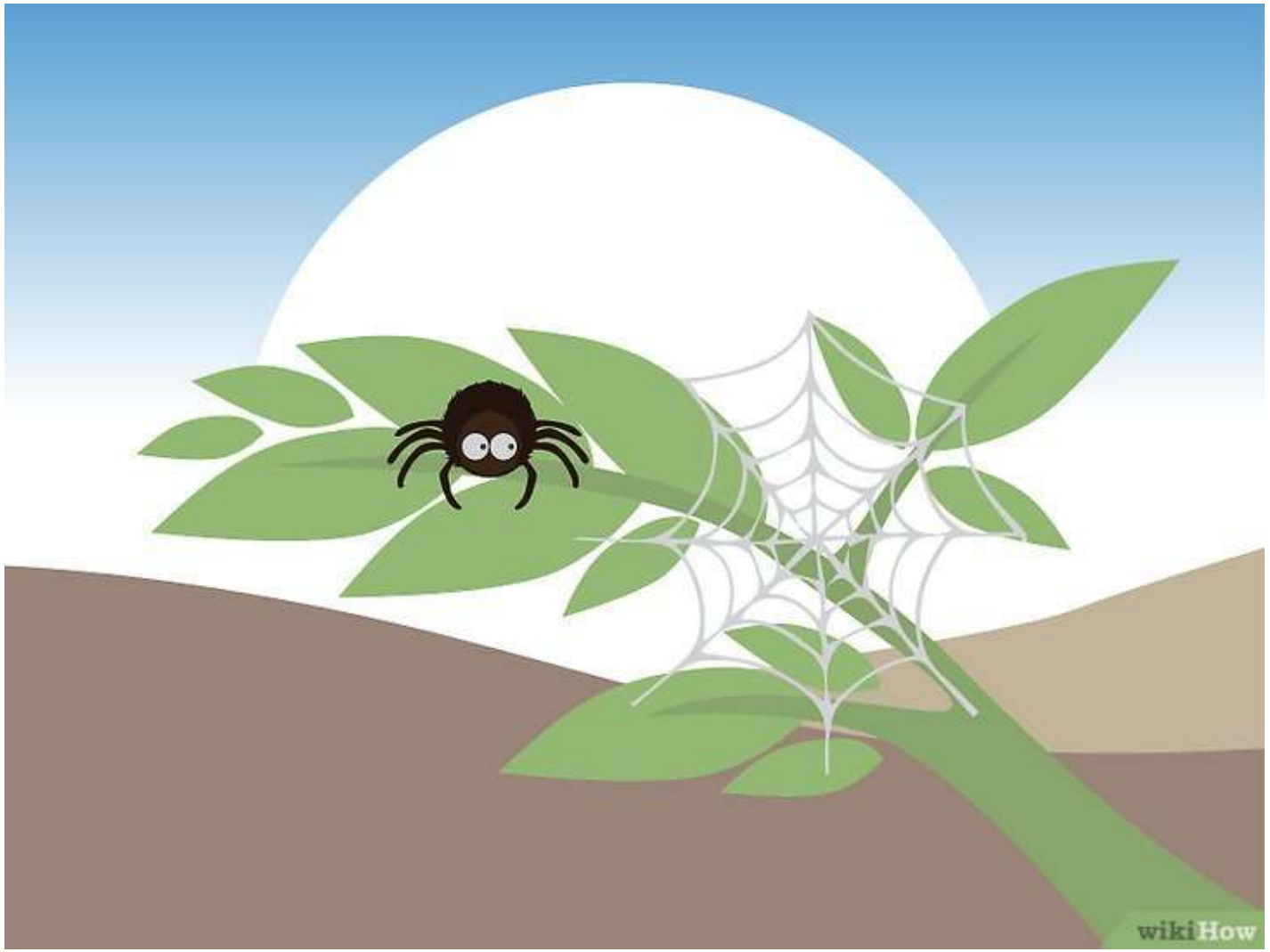
Hans Selye (1907-1982)



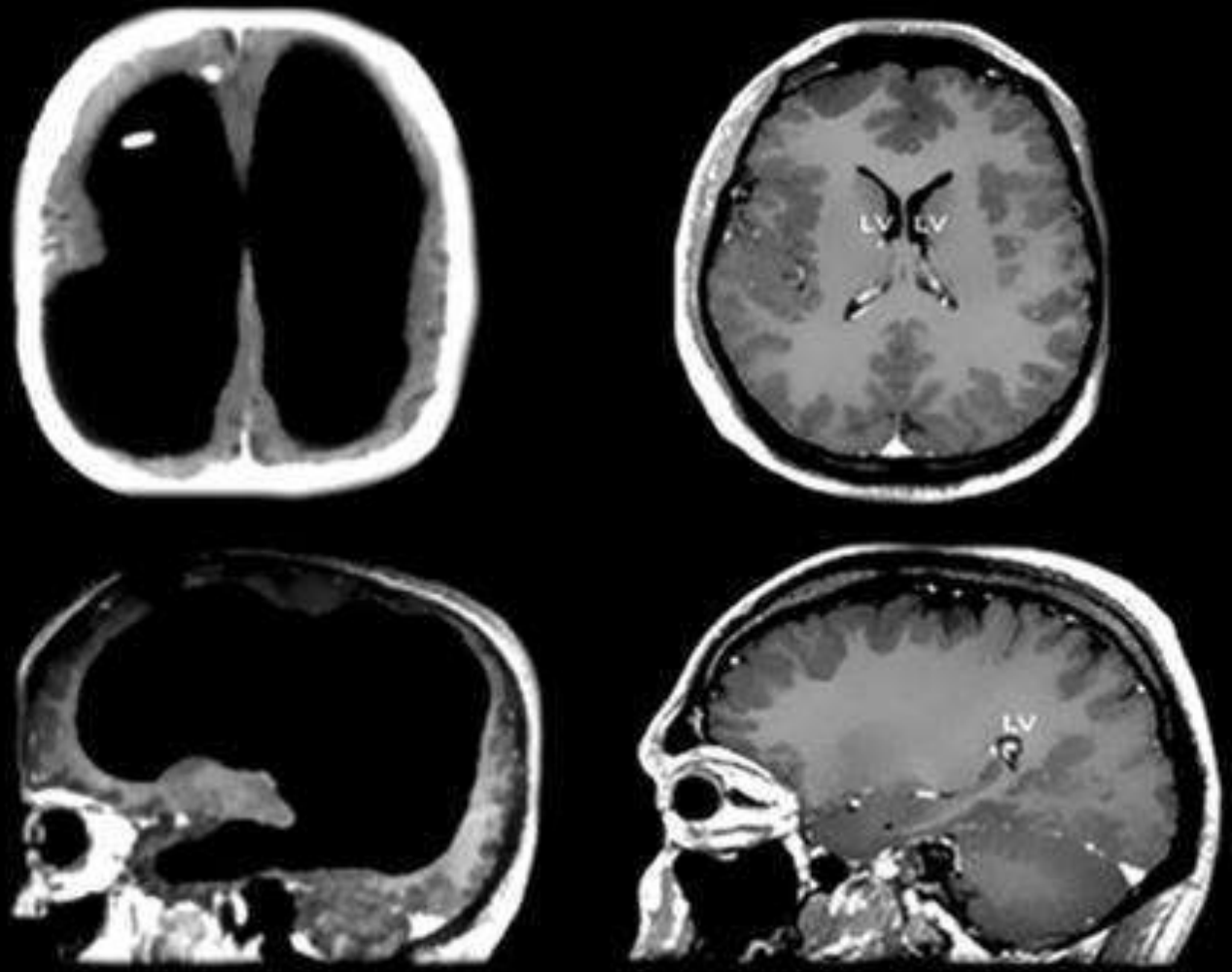
Hans Selye (1907-1982)

Hans Selye (1907-1982)

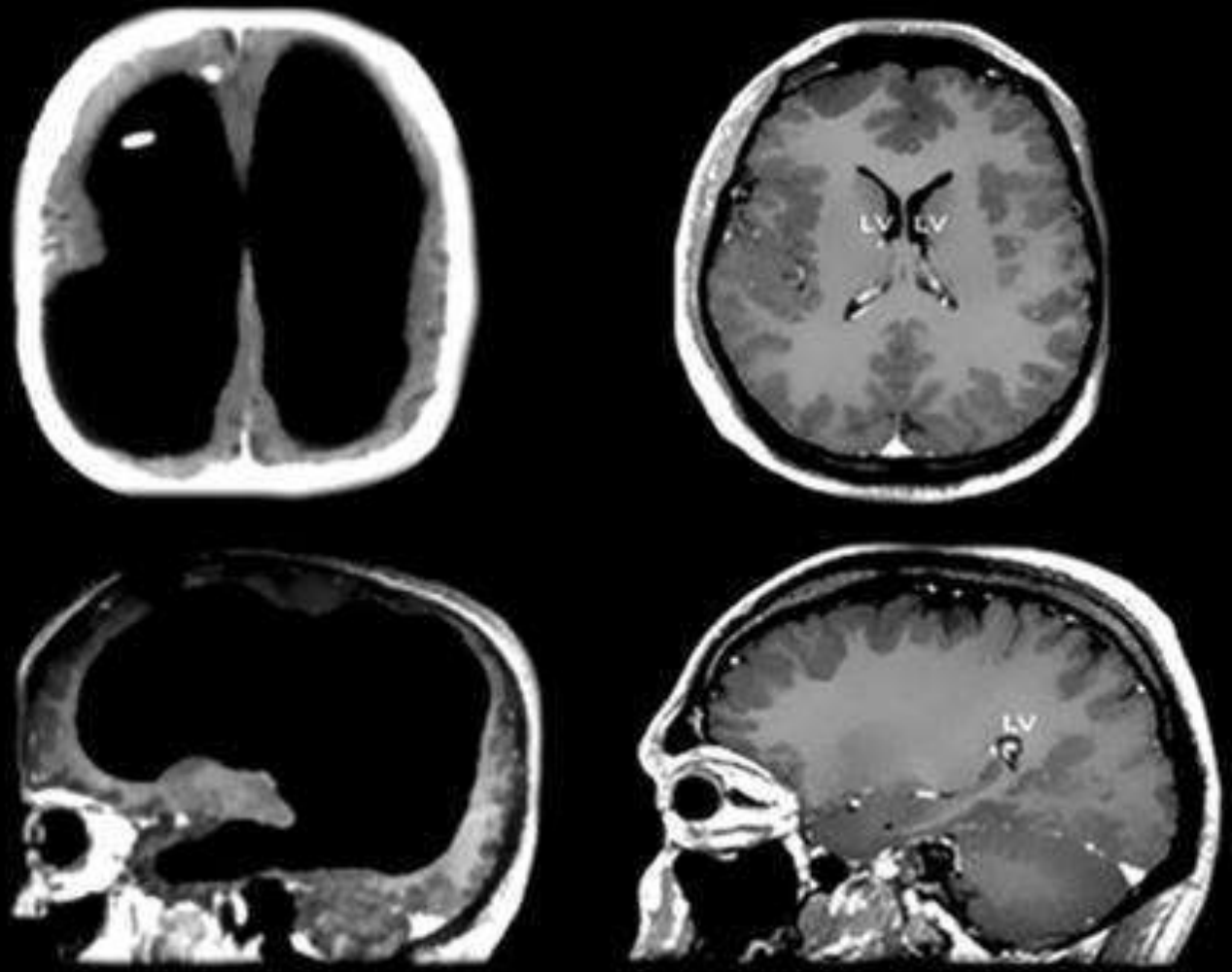

wikiHow


wikiHow


Doh



(John Lorber, 1980)



Is Your Brain Really Necessary?

John Lorber, a British neurologist, claims that some patients are more normal than would be inferred from their brain scans

"Professor John Lorber has a facility for making doctors sit up and think about hallowed concepts," writes Adrian Bower, a neuroanatomist at Sheffield University, England, where Lorber holds a research chair in pediatrics. "The human brain is the current object of his challenging speculation," continues Bower, referring to his colleague's recent propositions concerning hydrocephalus, or water on the brain. For instance, Lorber was not jesting totally when he addressed a conference of pediatricians with a paper entitled "Is your brain really necessary?" Lorber believes that his observations on a series of hydrocephalics who have severely reduced brain tissue throws into question many traditional notions about the brain, both in clinical and scientific terms.

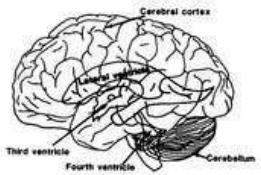
"There's a young student at this university," says Lorber, "who has an IQ of 126, has gained a first-class honors degree in mathematics, and is socially completely normal. And yet the boy has virtually no brain." The student's physician at the university noticed that the youth had a slightly larger than normal head, and so referred him to Lorber, simply out of interest. "When we did a brain scan on him," Lorber recalls, "we saw that instead of the normal 4.5-centimeter thickness of brain tissue between the ventricles and the cortical surface, there was just a thin layer of mantle measuring a millimeter or so. His cranium is filled mainly with cerebrospinal fluid."

This is dramatic by any standards, and Lorber clearly enjoys retailing the story. But, startling as it may seem, this case is nothing new to the medical world. "Scores of similar accounts litter the medical literature, and they go back a long way," observes Patrick Wall, professor of anatomy at University College, London, "but the important thing about Lorber is that he's done a long series of systematic scanning, rather than just dealing with anecdotes. He has gathered a remarkable set of data and he challenges, 'How do we explain it?' "

How can someone with a grossly reduced cerebral mantle not only move among his fellows with no apparent social deficit, but also reach high academic achievement? How is it that in some hydrocephalics whose brains are severely distorted asymmetrically, the expected one-sided paralysis is typically absent? And how is one to interpret the apparent restoration to normality of a hydrocephalic brain following a shunt operation? These are the challenges that Lorber is proffering his neurology colleagues.

Lorber came to make his observations on hydrocephalus through his involvement with assessment and treatment of spina bifida, a congenital condition in which the spinal column fails to fuse completely, leaving nerve tissue perilously exposed. The great majority of patients with spina bifida also suffer from hydrocephalus.

Although the origins of hydrocephalus are to some degree shrouded in mystery, it is clearly associated with a disturbance of the circulation of cerebrospinal fluid through a system of channels and reservoirs, or ventricles, in the brain. Back pressure apparently develops, and this may balloon the ventricles to many times their normal size, so pressing the overlying brain tissue against the cranium. In young children, whose skulls are still malleable, one obvious consequence can be a grossly enlarged head. Additionally, this physical assault from within leads to a real loss of brain matter. It is therefore not surprising that many hydrocephalics suffer intellectual and physical disabilities. What is surprising, however, is that a substantial proportion of patients appear to escape functional impairment in spite of grossly abnormal brain structure.



Cerebral ventricles

Two hornlike lateral ventricles drain into a common third ventricle which in its turn leads to a common fourth ventricle. Cerebrospinal fluid flows from the lateral ventricles, through the third and fourth ventricles, leading to a "sink" along the midline at the top of the head and to a channel that runs down the spinal column.

"The spina bifida unit at the Children's Hospital here in Sheffield is one of the largest in the world," explains Lorber, "and this gives us an opportunity to make many observations. Since the introduction of the safe, noninvasive brain scanning technique just a few years ago we have done more than 600 scans on patients with hydrocephalus." Lorber divides the subjects into four categories: those with minimally enlarged ventricles; those whose ventricles fill 50 to 70 percent of the cranium; those in which the ventricles fill between 70 and 90 percent of the intracranial space; and the most severe group, in which ventricle expansion fills 95 percent of the cranium. Many of the individuals in this last group, which forms just less than 10 percent of the total sample, are severely disabled, but half of them have IQ's greater than 100. This group provides some of the most dramatic examples of apparently normal function against all odds.

Commenting on Lorber's work, Kenneth Till, a former neurosurgeon at the Great Ormond Street Hospital for Sick Children, London, has this to say: "Interpreting brain scans can be very tricky. There can be a great deal more brain tissue in the cranium than is immediately apparent." Till echoes the cautions of many practitioners when he says, "Lorber may be being rather overdramatic when he says that someone has 'virtually no brain.' " Lorber acknowledges the problem of interpretation of brain scans, and he counters Till's remarks by insisting, "Of course these results are dramatic, but they're not overdramatic. One would not make the claim if one did not have the evidence."

A major obstacle in this work is the difficulty of obtaining the kind of quantitative data that would be expected in a scientific investigation of, say, rat brains. "I can't say whether the mathematics student has a brain weighing 50 grams or 150 grams, but it's clear that it is nowhere near the normal 1.5 kilograms," asserts Lorber, "and much of the brain he does have is in the more

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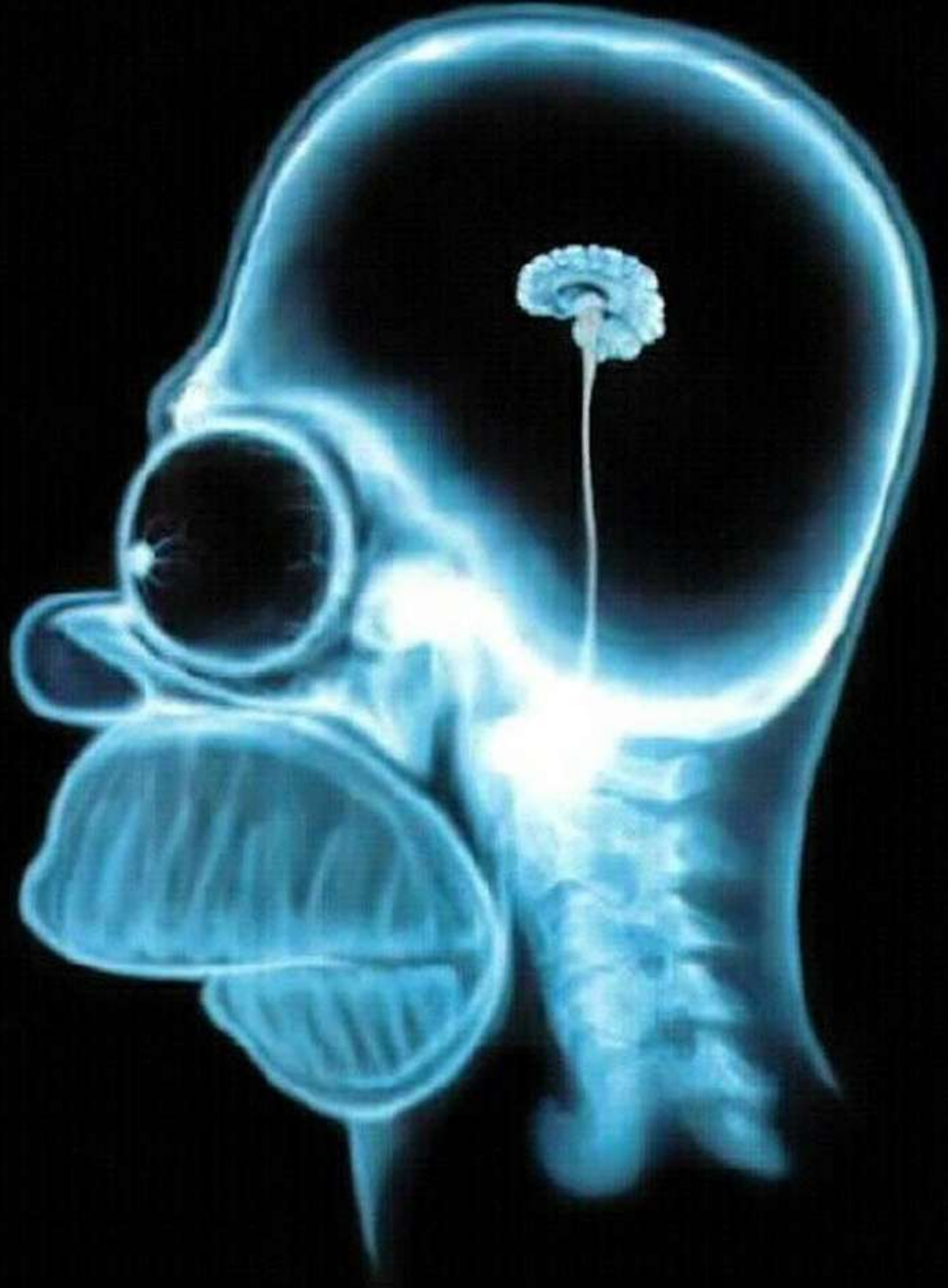
(John Lorber, 1980)



(John Lorber, 1980)

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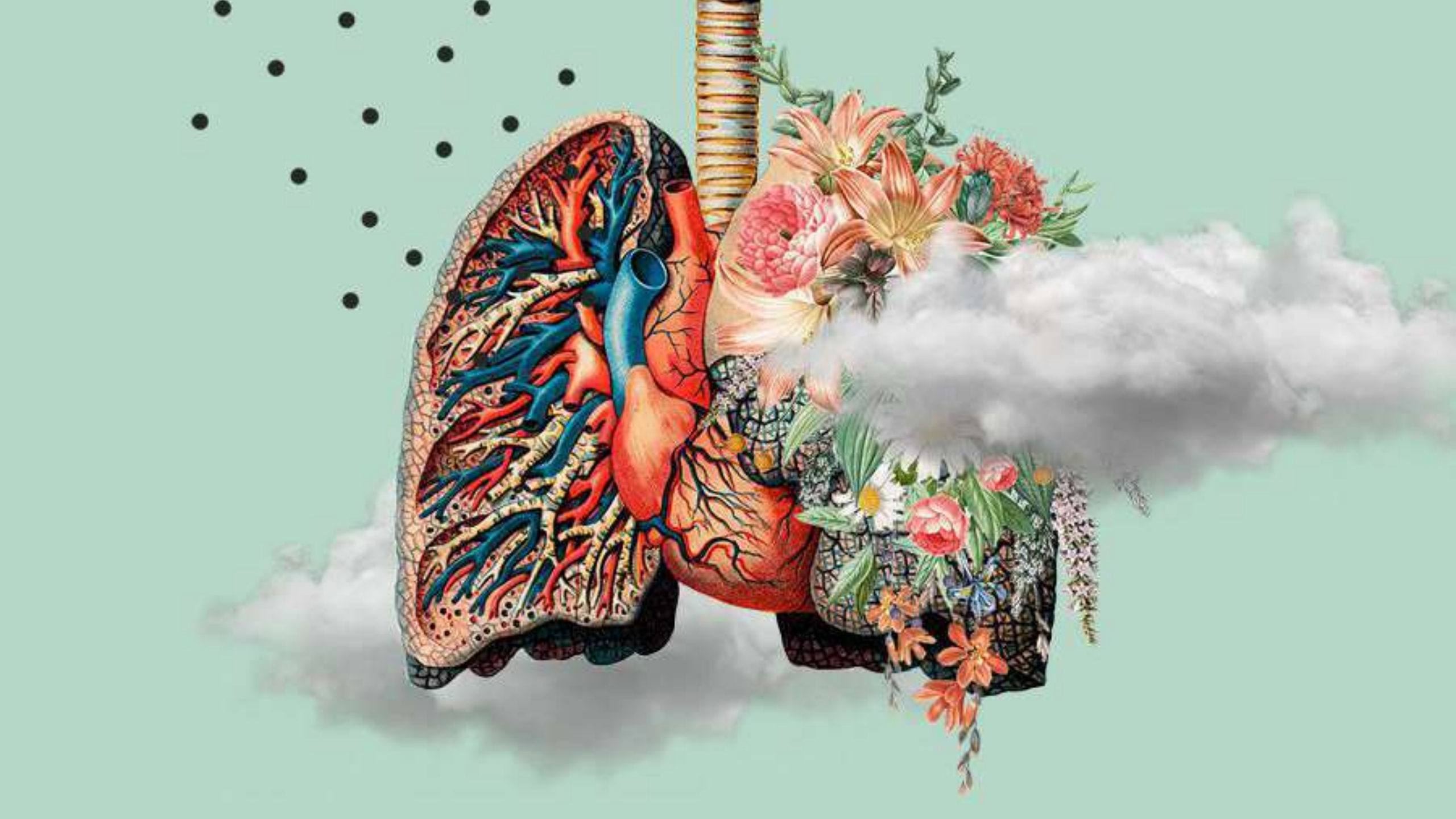
(Cotman y Berchtold. 2002; Hakansson et al. 2017)

Gordon, R. et al., 2015



¡Gracias!