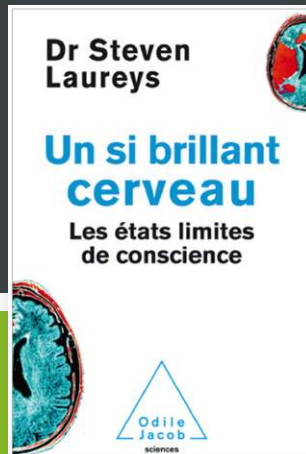




Médecine, science, éthique & loi de la conscience & de l'âme

Steven Laureys



9/03/16
Verviers

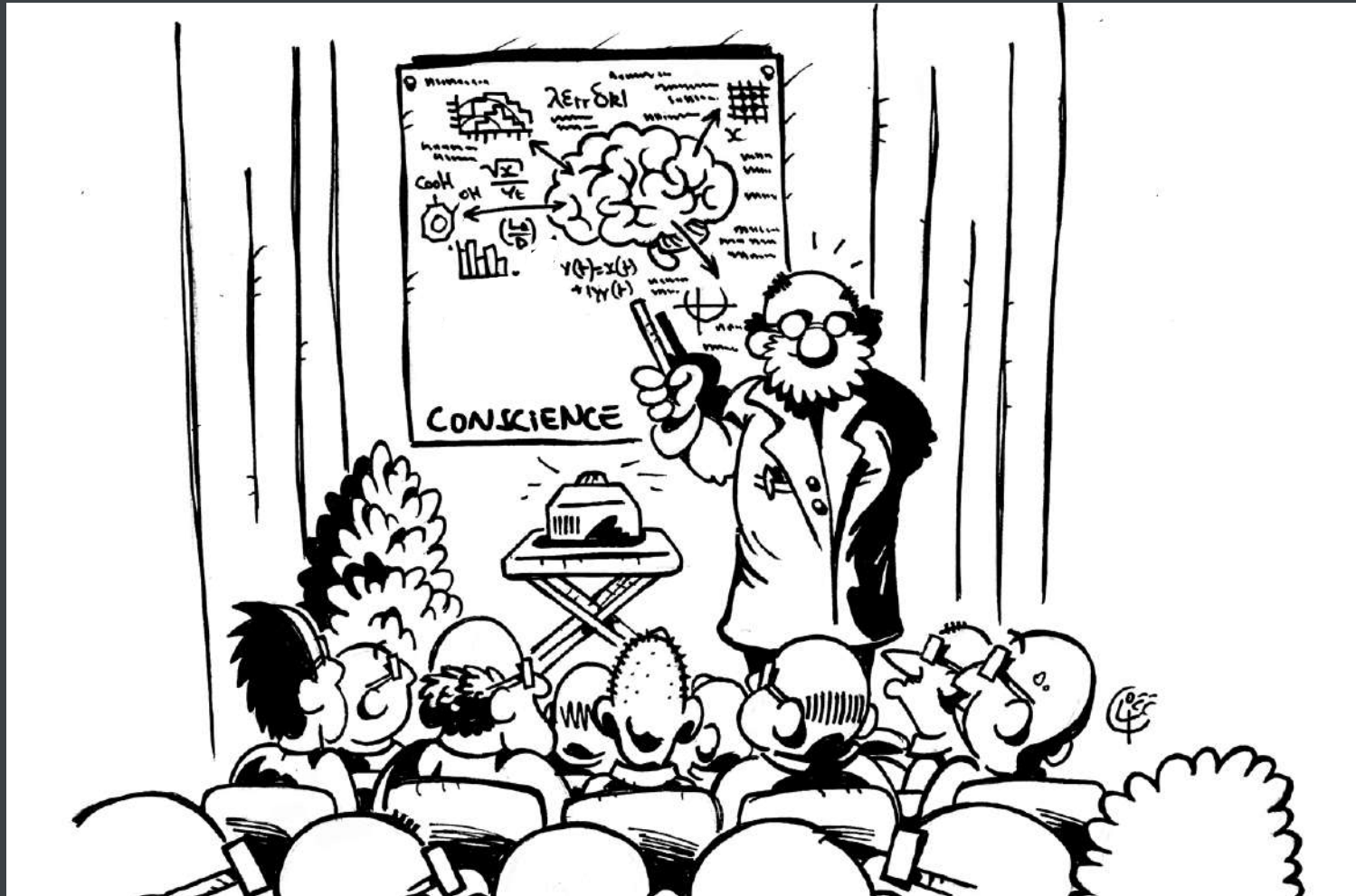




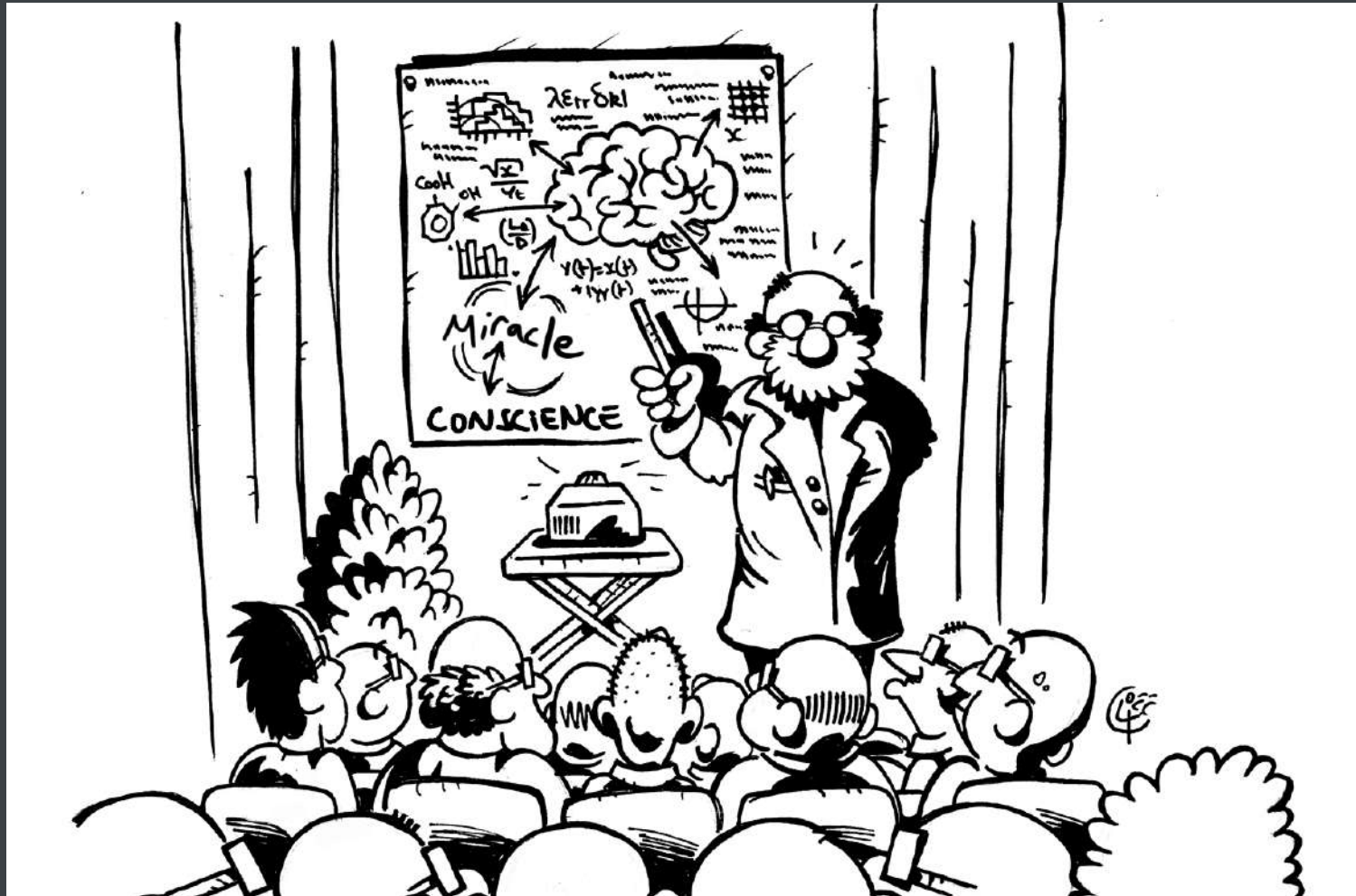
GIGA – Consciousness

- 1997 CRC; 2007 Coma Science Group; 2015 integration GIGA
- OTPs transferred from CRC; Full team left offices of CRC
- Translational research ULg platform at CHU
- GIGA : big, well organized, transparent & democratic
- SL is accepted as special extra-member ‘bureau’
(permission to be confirmed or not on annual basis)
- Promote Consciousness as research theme; “Liège School”
- Win-win synergy ULg-CHU
 - Hypnosis (A Vanhaudenhuyse H32; 100% research CHU-CIO)
 - Anesthesia (V Bonhomme H20; CHU-Pharm I)
 - Intensive Care (D Ledoux H25; 50% CHU, 50% SPF GIFT)
 - Disorders of consciousness (S Laureys H67, A Soddu H23)

Comment la science peut-elle expliquer la conscience ?



Comment la science peut-elle expliquer la conscience ?



Comment la science peut-elle expliquer la conscience ?



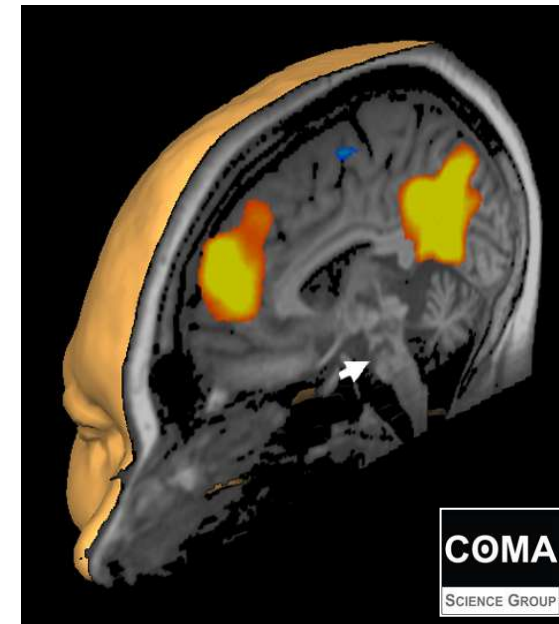
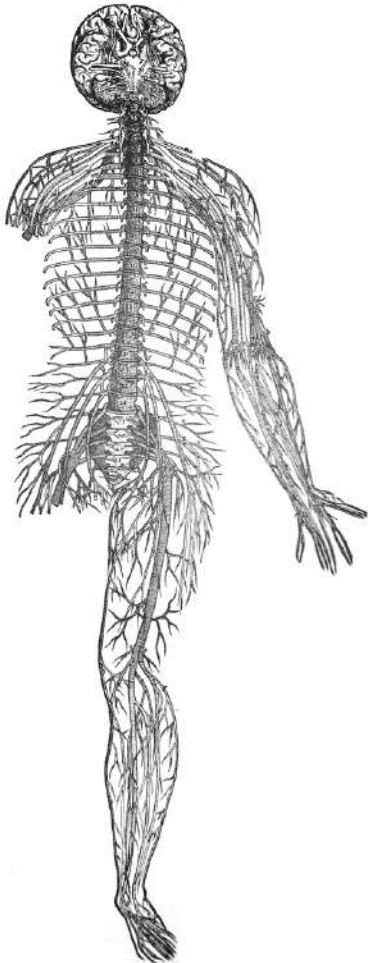


Comment la science peut-elle expliquer la conscience ?

Vésale, 1565

Ramón y Cajal, 1899

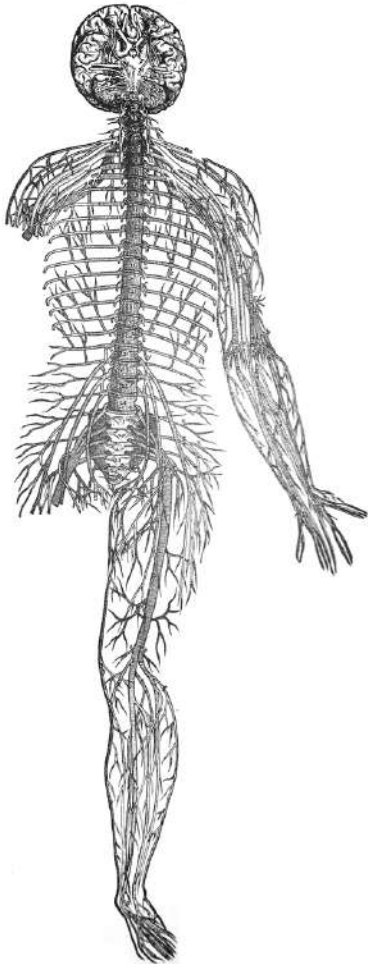
2015



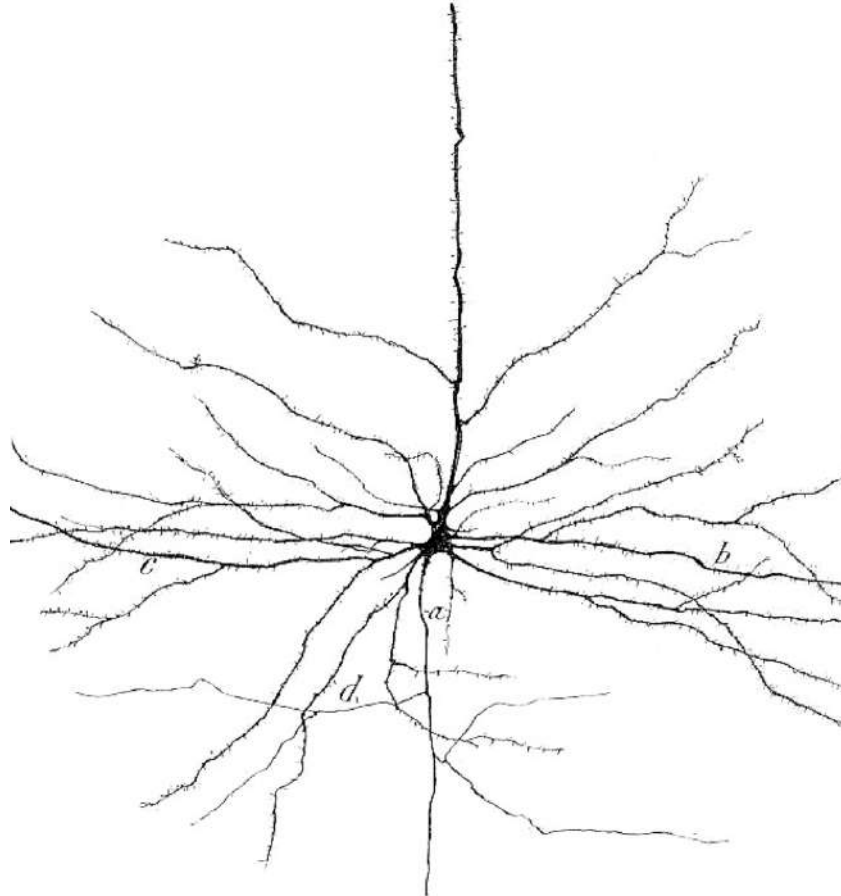


Comment la science peut-elle expliquer la conscience ?

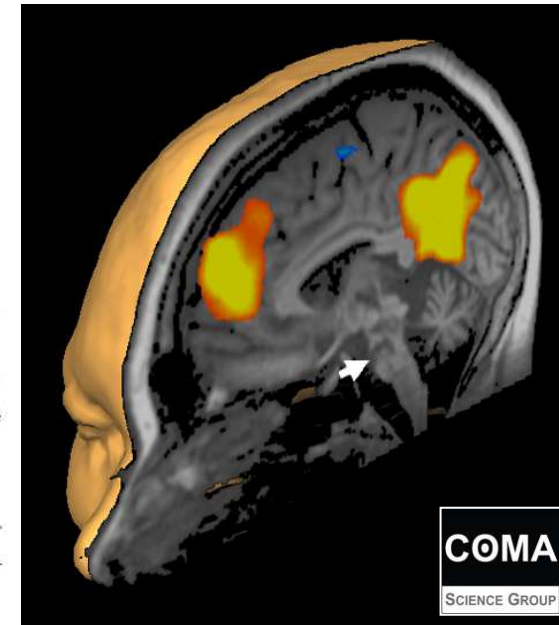
Vésale, 1565



Ramón y Cajal, 1899

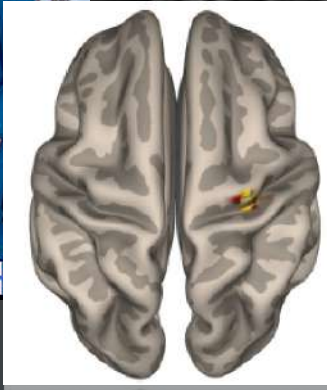
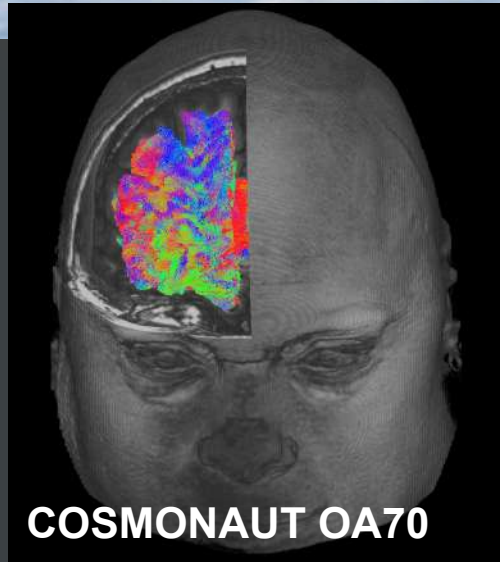
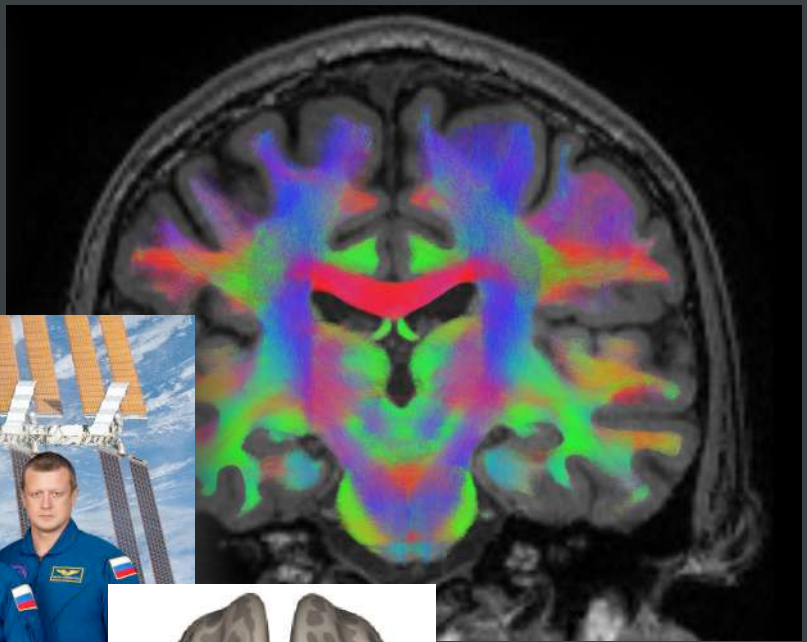


2015





Comment la science peut-elle expliquer la conscience ?

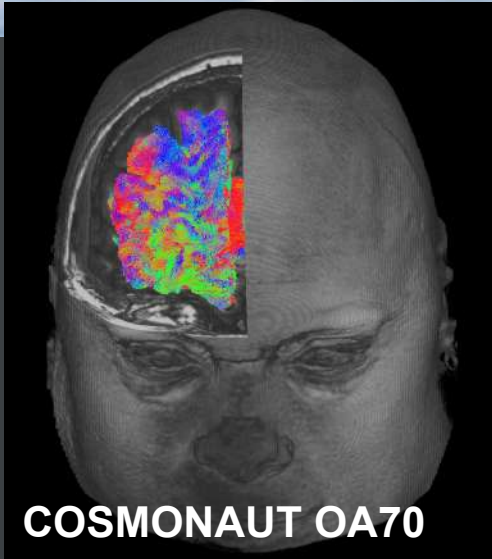
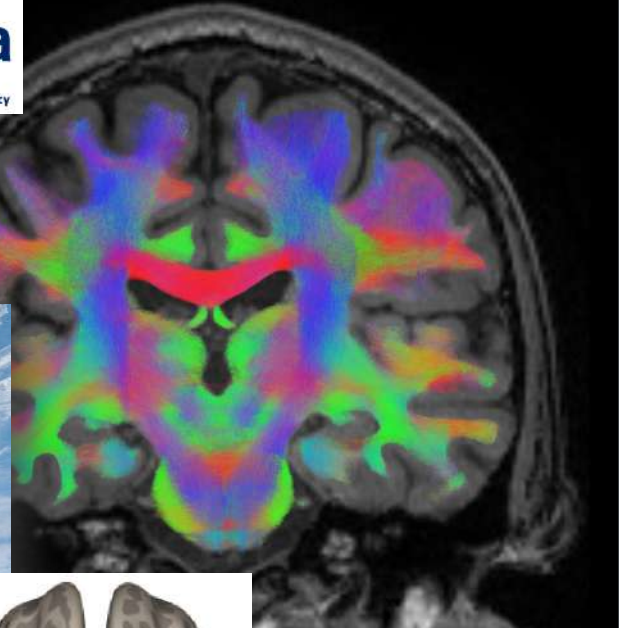


COSMONAUT OA70

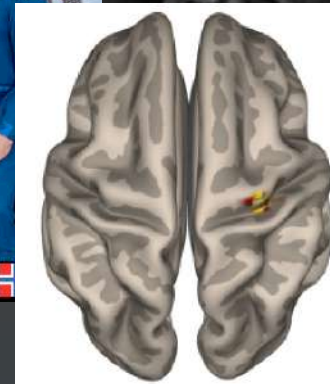
Microgravity induced neuroplasticity in astronauts
ESA BRAIN-DTI project, with F Wuyts

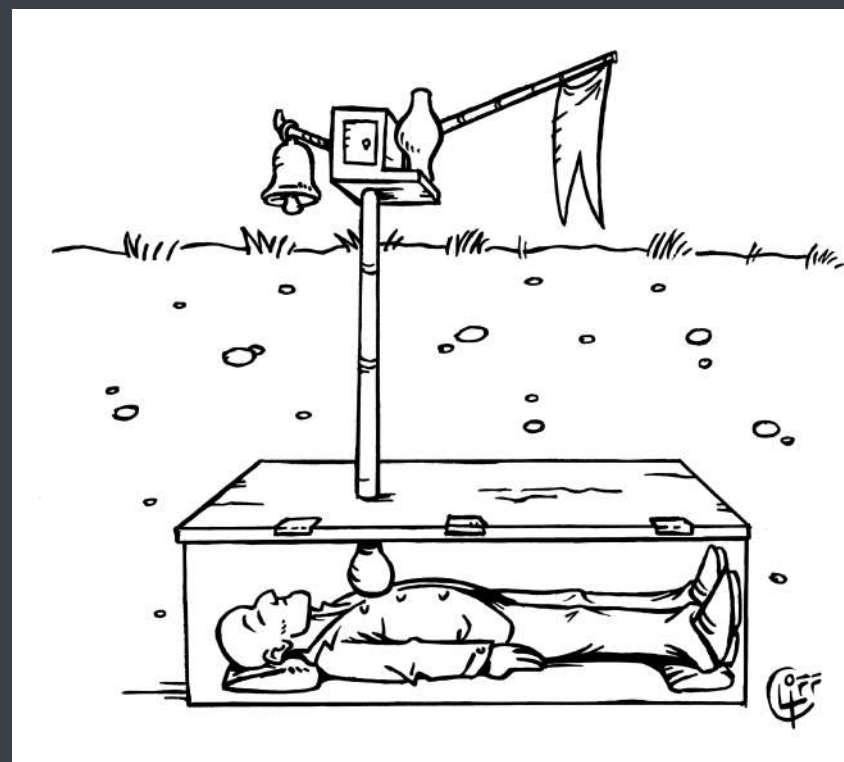


Liège dans l'espace...



COSMONAUT OA70





Karnice-Karnicki, 1896

Liège: un médecin belge au chevet d'un «zombie» en chair et en os

C.V.

Le Pr Steven Laureys, de l'Université de Liège, a étudié, pour la première fois au monde, le cerveau d'un individu persuadé d'être un mort-vivant. Le patient, un Anglais de 49 ans, souffre réellement d'un trouble neurologique, révèlent les clichés réalisés par le neurologue liégeois.



12 réactions

J'aime Partager 475

Tweeter

g+1 1



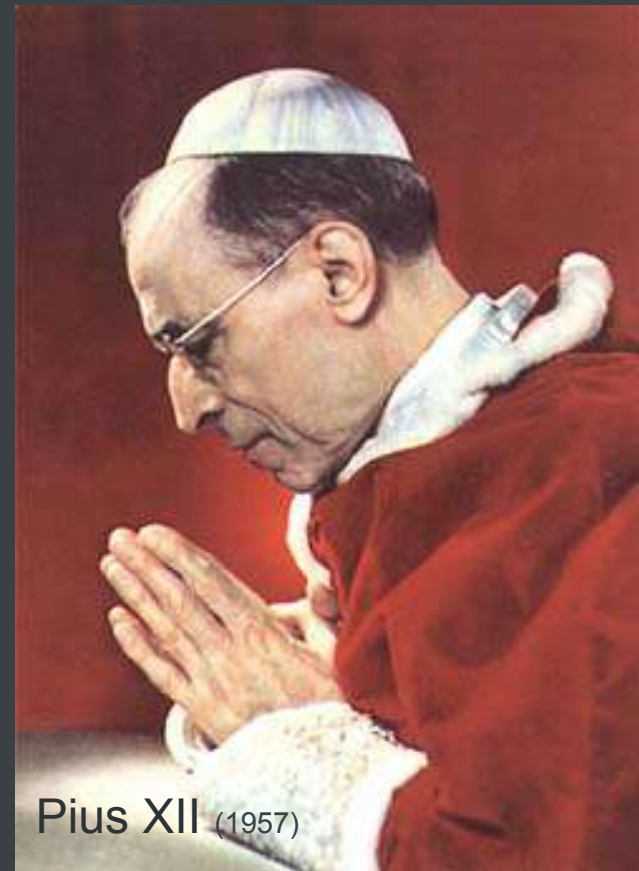
« Docteur, je suis venu vous prouver que je suis mort. Mon cerveau est mort, dans un corps vivant. Je suis un mort-vivant. » C'est en ces termes que Graham, un Anglais aujourd'hui âgé de 49 ans, s'est présenté chez son médecin de famille, il y a neuf ans.



Graham, 57, who suffers from Cotard's syndrome, otherwise known as 'zombie' syndrome.
Picture: Richard Austin



Une histoire du «coma»





Test clinique \neq mort

Transplants - Are the donors really dead ?



Depuis les années 50 s
aucun patient avec les
critères de mort cérébrale a
recupéré conscience

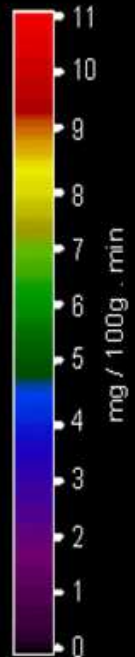
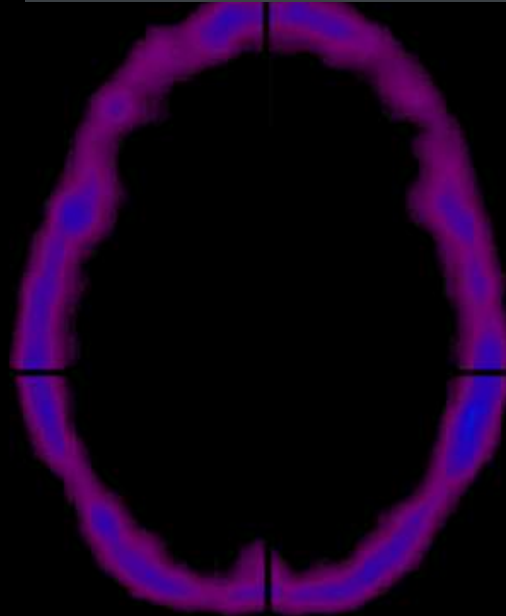
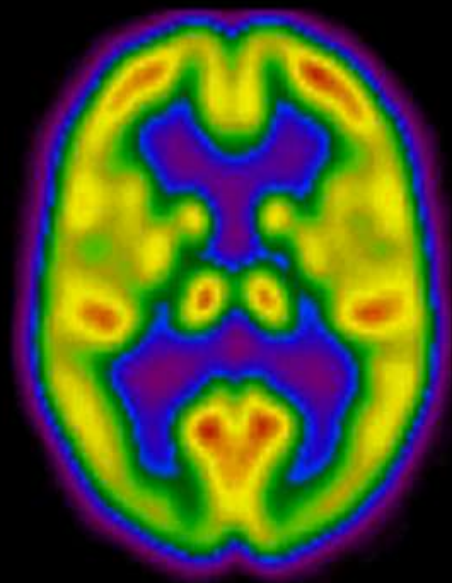
(Laureys, Nature Reviews Neuroscience 2005)



Mort cérébrale = mort

CONSCIENCE
NORMALE

MORT
CEREBRALE





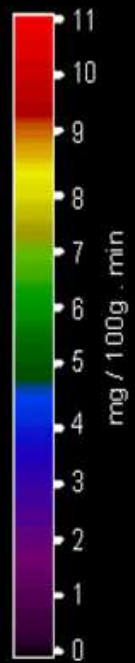
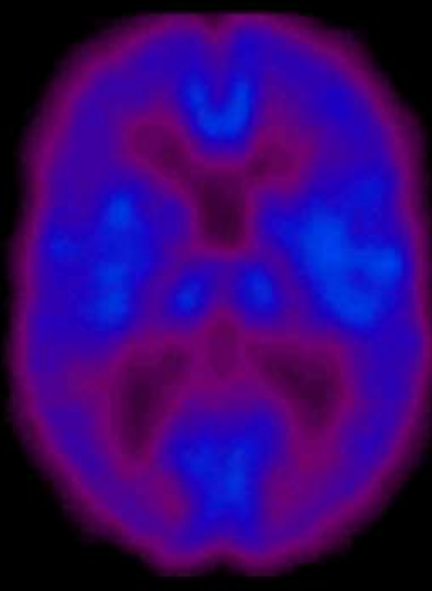
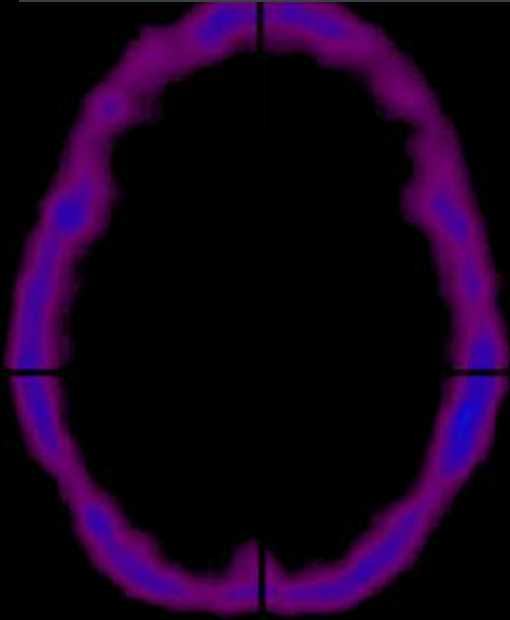
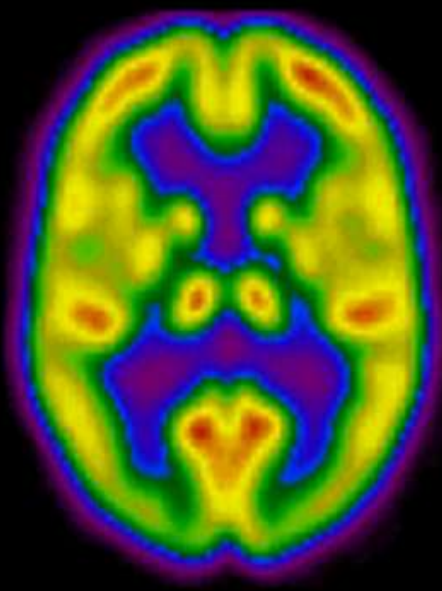
ort clinique \neq mort



CONSCIENCE
NORMALE

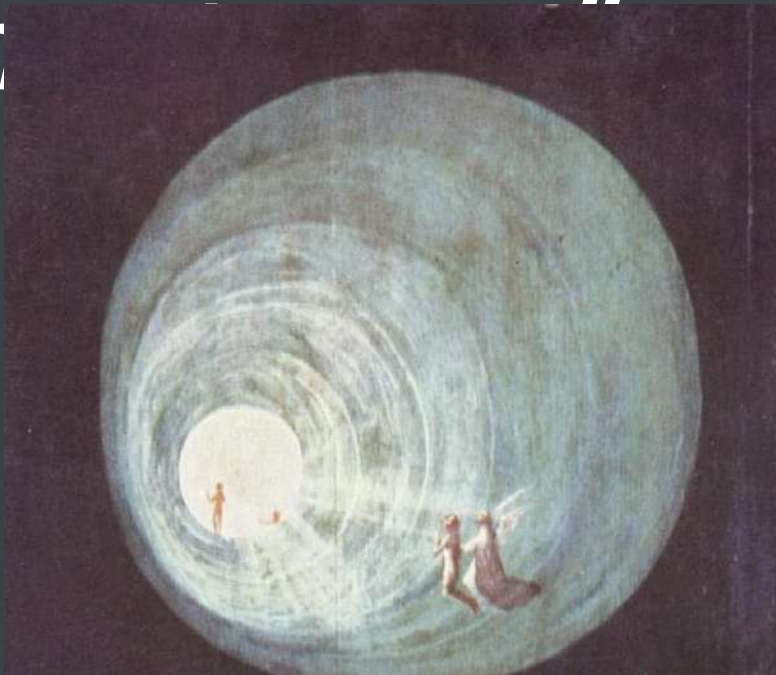
MORT
CEREBRALE

ARRET
CARDIAQUE



“Docteur, j’ai eu une expérience de mort

in



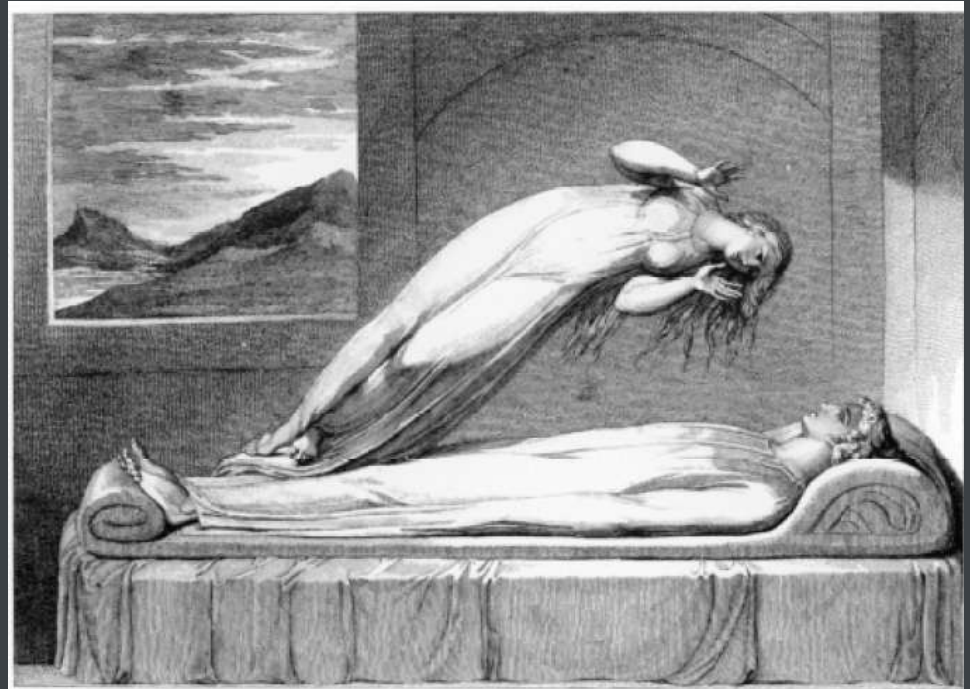
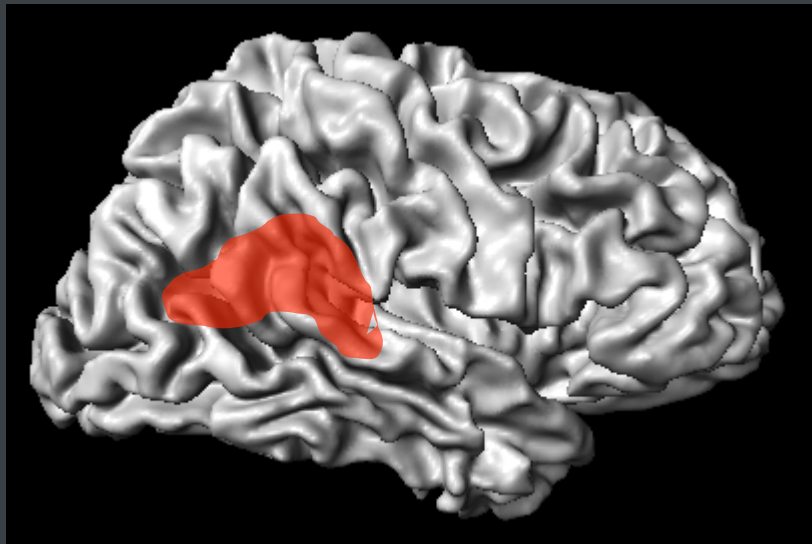
Hieronymus Bosch 1500s Visions de l'au-delà



Towards a neuro-scientific explanation of Near-Death Experiences?
Vanhaudenhuyse, Thonnard, Laureys
2009 Yearbook of Intensive Care and Emergency Medicine Springer-Verlag



Corporation»



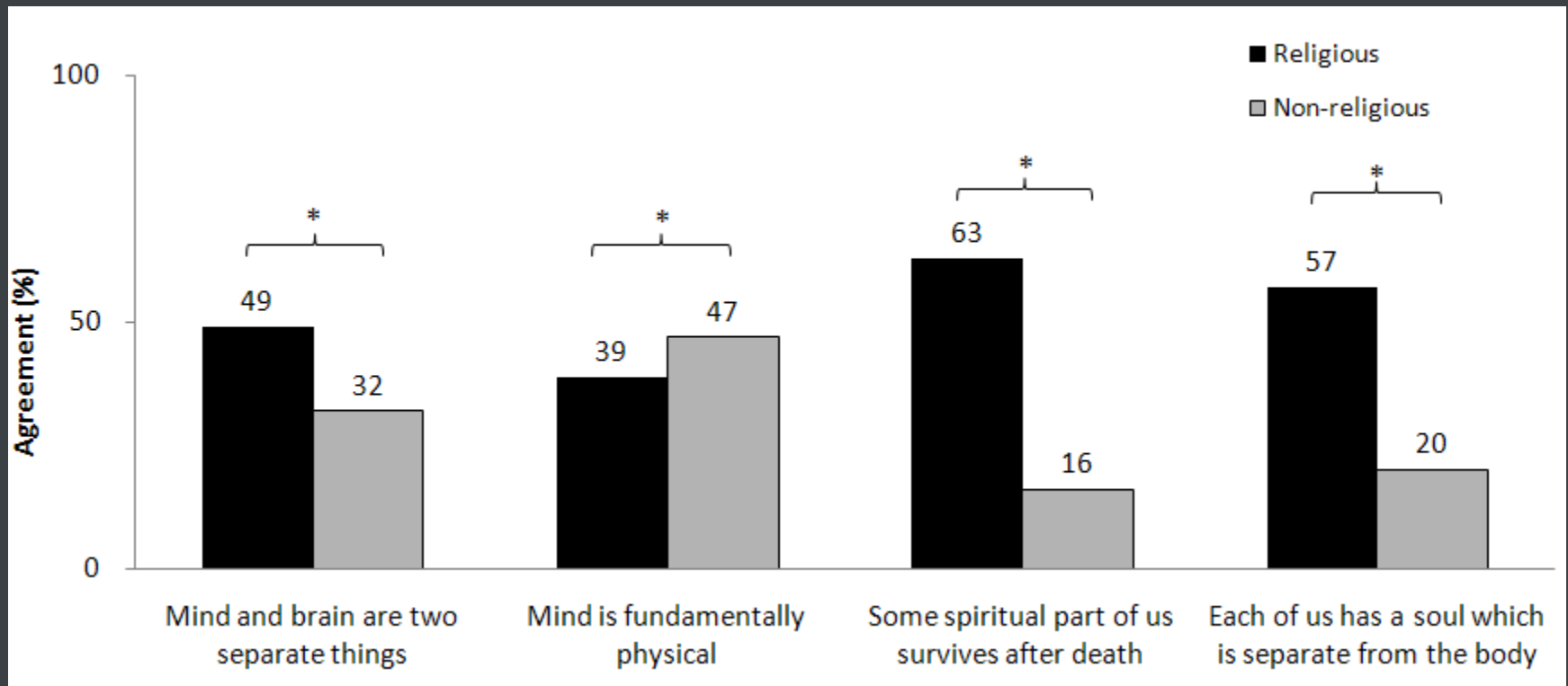
The Soul hovering over the Body reluctantly parting with Life.

Blanke et al Stimulating illusory own-body perceptions. Nature, 2002 (6904)269-70

De Ridder et al Visualizing out-of-body experience in the brain. N Engl J Med, 2007 (357) 1829-1833

Vous êtes votre cerveau!

1858 participants attending scientific meetings on consciousness



Combien pèse la conscience?

1907

SOUL HAS WEIGHT, PHYSICIAN THINKS

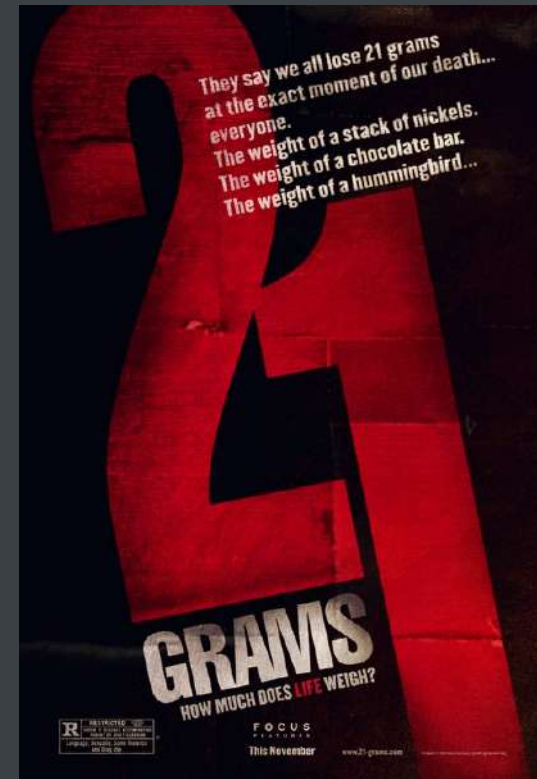
Dr. Macdougall of Haverhill Tells
of Experiments at
Death.

LOSS TO BODY RECORDED

Scales Showed an Ounce Gone in One
Case, He Says—Four Other
Doctors Present.

Special to The New York Times.

BOSTON, March 10.—That the human soul has a definite weight, which can be determined when it passes from the body, is the belief of Dr. Duncan Macdougall, a reputable physician of Haverhill. He is at the head of a Research Society which for six years has been experimenting in this field. With him, he says, have been associated four other physicians.





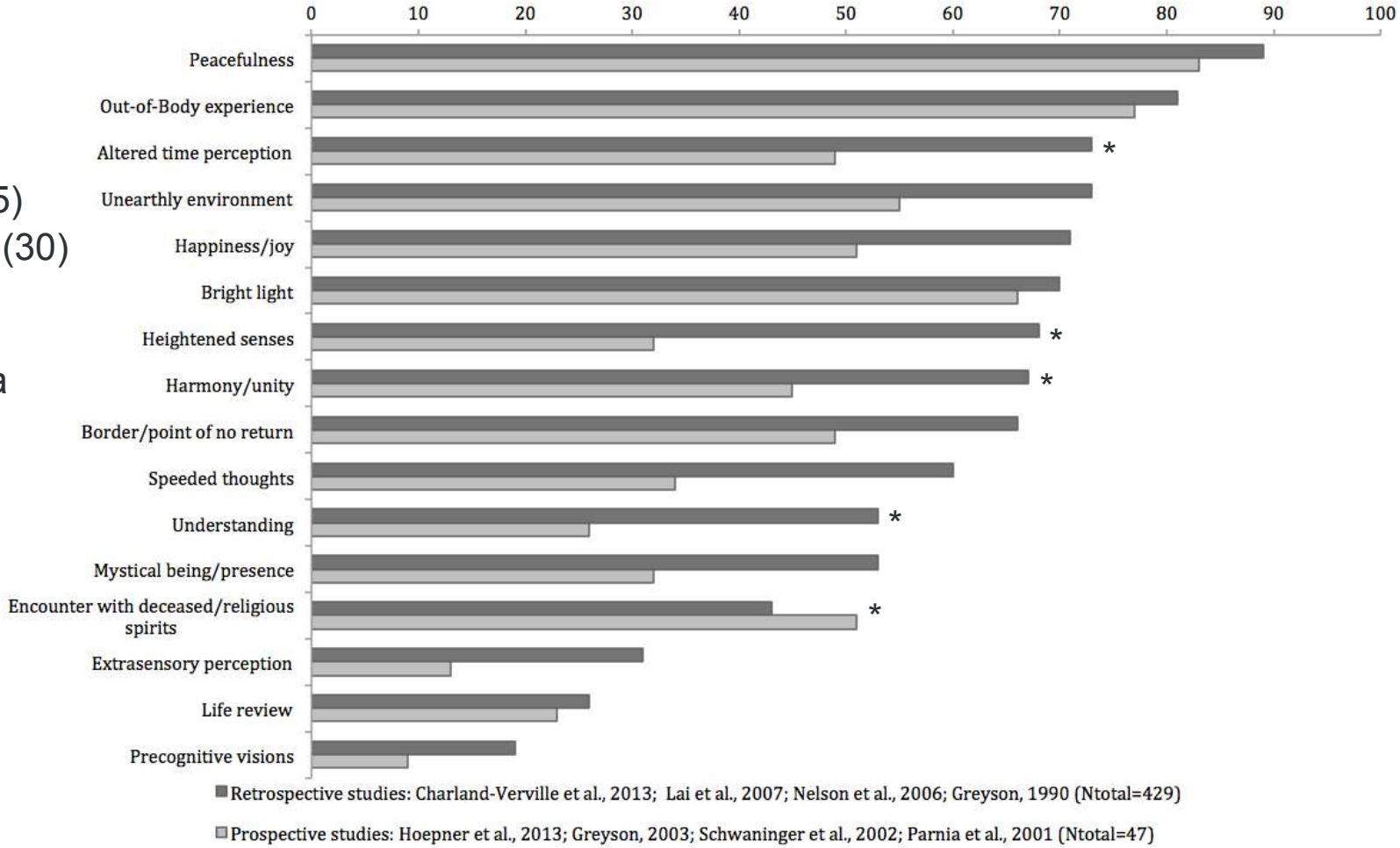
G I G A

Experience de Mort Imminente

99% positive
1% negative

140 coma
- anoxique (45)
- traumatique (30)
- autre (65)

50 pas de coma





cteur,

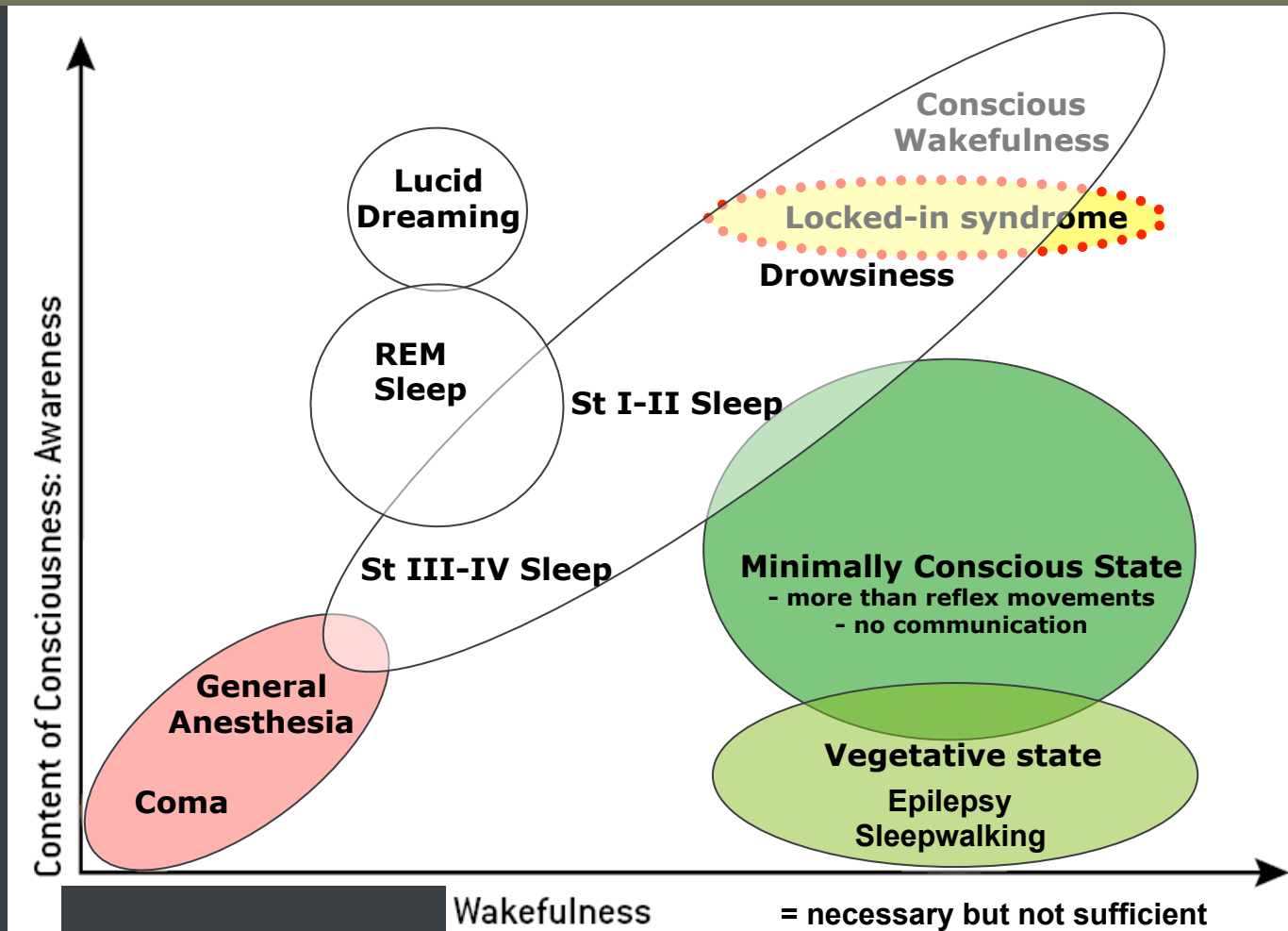
est-ce qu'elle est consciente?



30% des diagnostics
“végétatif” sont erronés

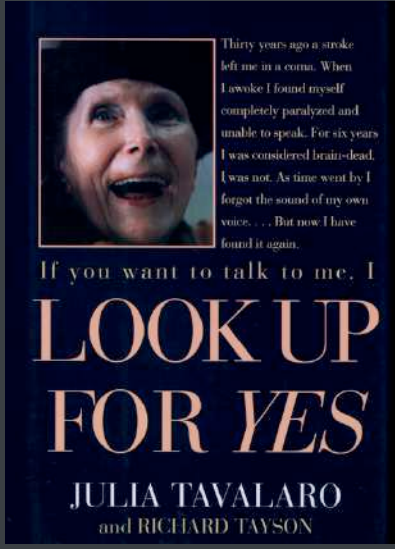
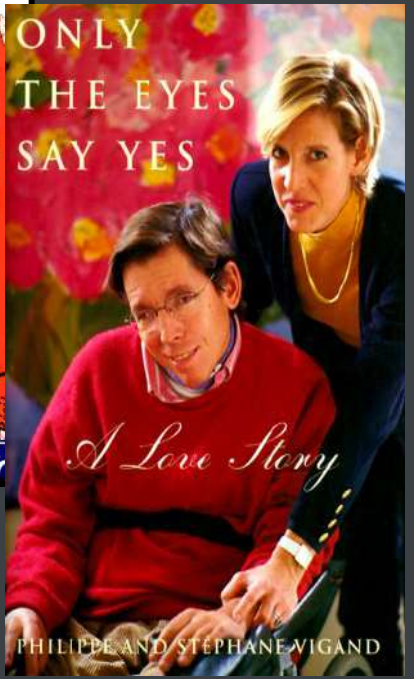
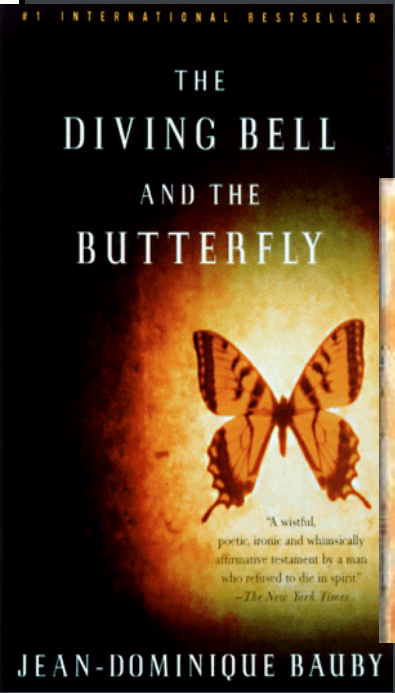
Stender et al, Lancet 2014

Réduire la conscience à 2D



Pseudo-coma







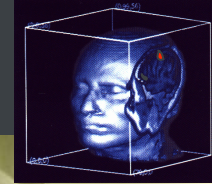
fonctionnelle

an

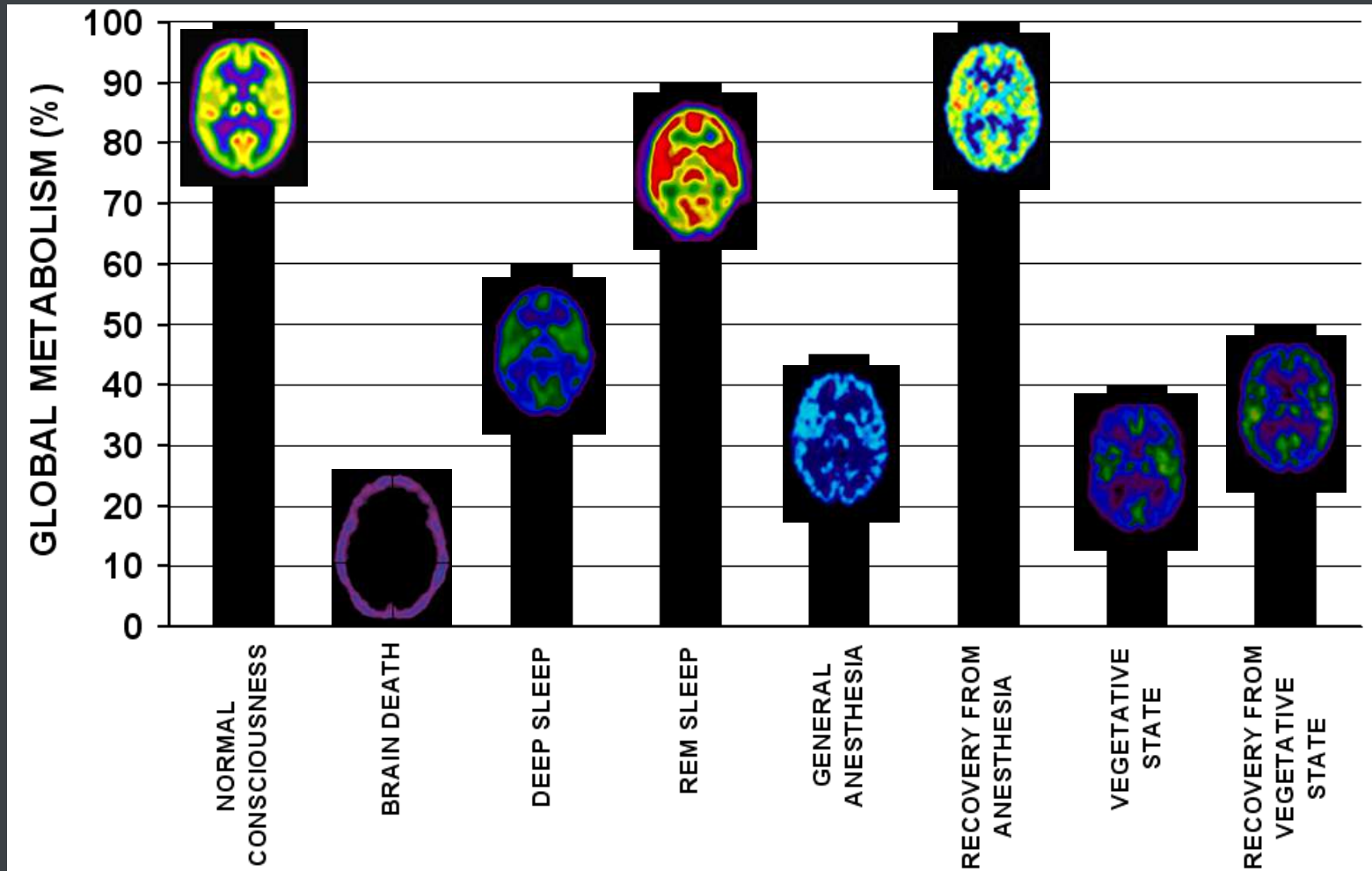
GIGA

Université de Liège

Stimulation magnétique transcrânienne

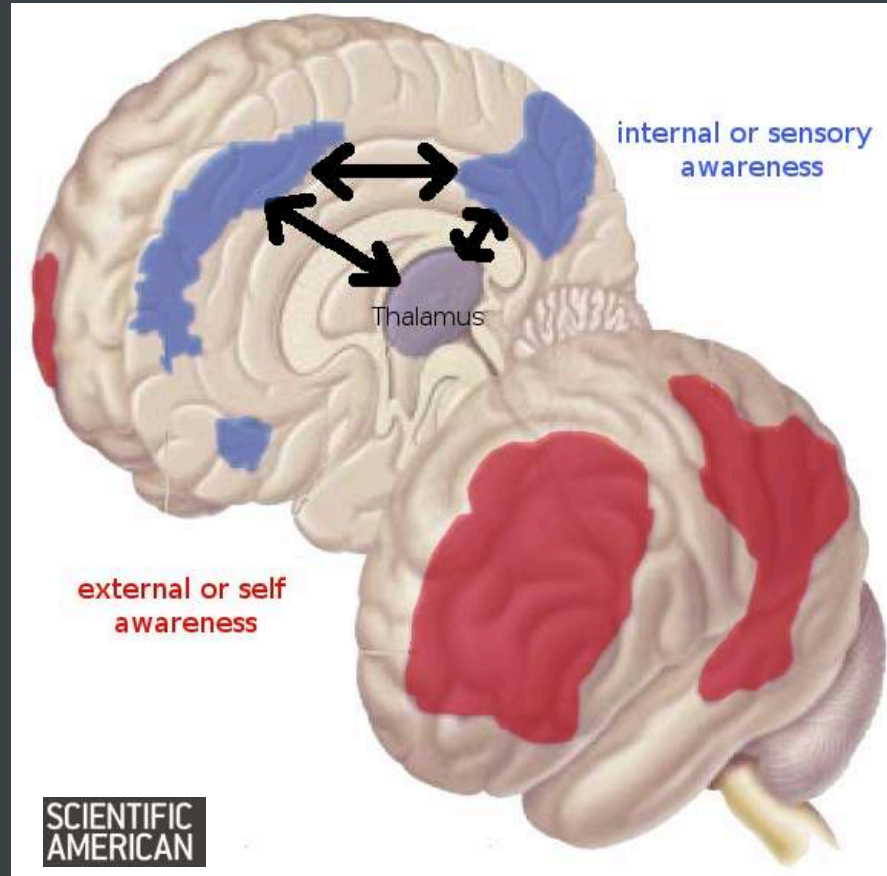


Consummation d'énergie globale

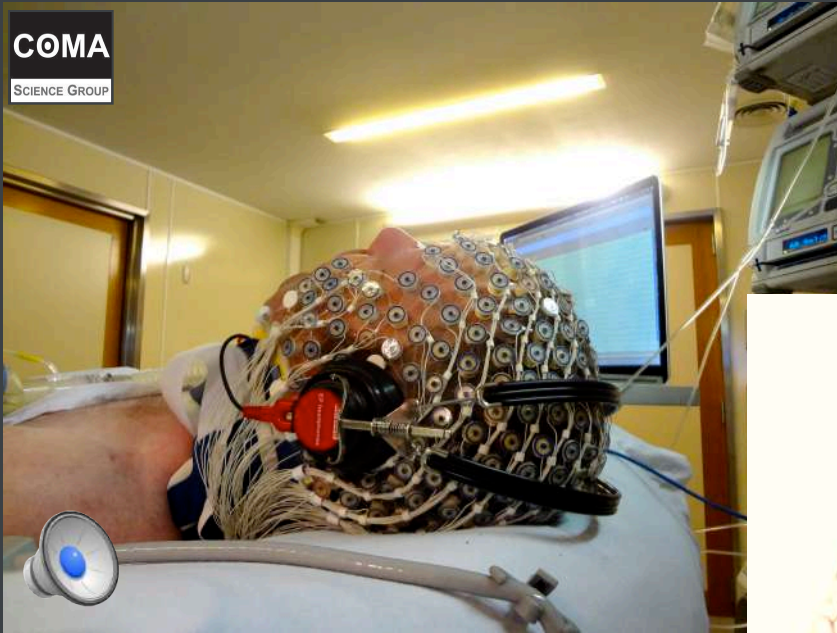


Réseau de la conscience

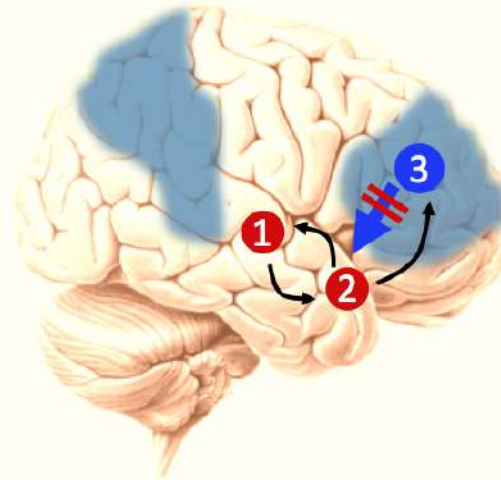
Régions du cerveau atteints en état végétatif /non-répondant



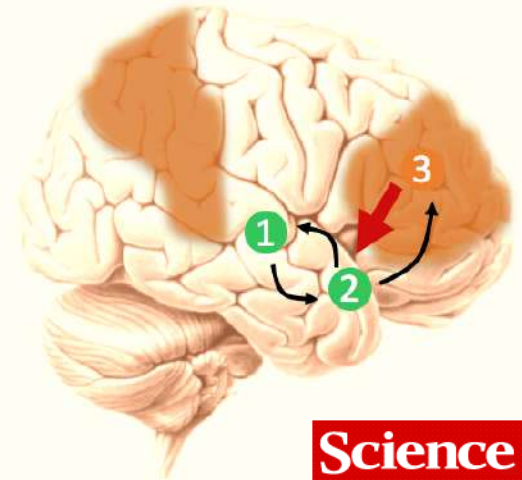
Réseau de la conscience



“VEGETATIVE”
UNRESPONSIVE



MINIMALLY
RESPONSIVE



Science

“Conscient de quoi?”

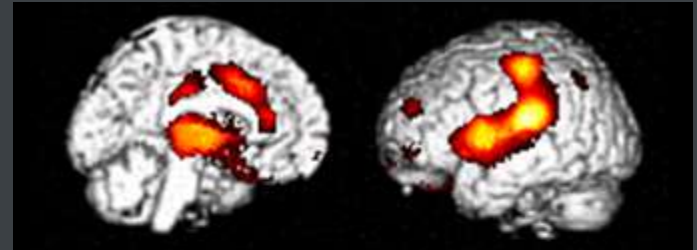


Laureys & Boly
What is it like to be vegetative or minimally conscious?
Curr Opin Neurol 20 (2007) 609-13

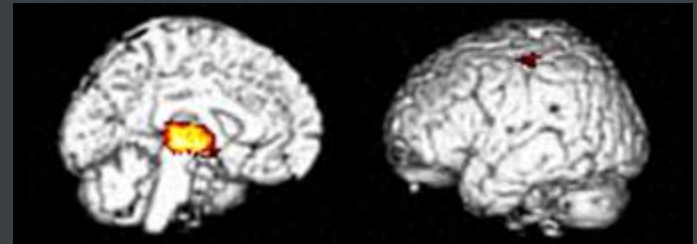
Mesurer la douleur avec le scanner



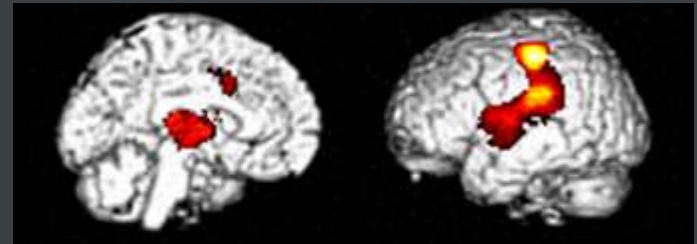
NORMALE



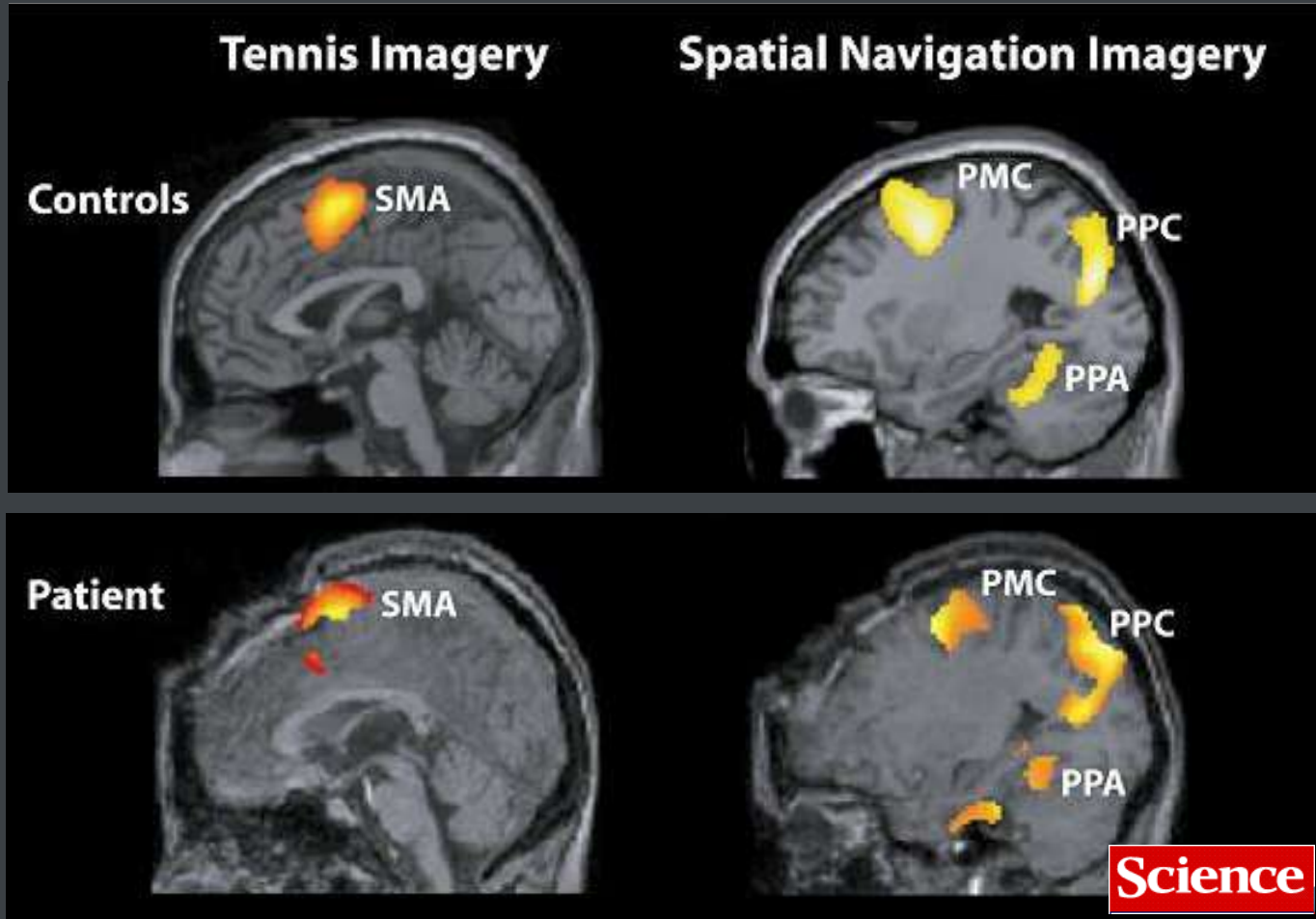
« VEGETATIF »



CONSCIENCE MINIMALE

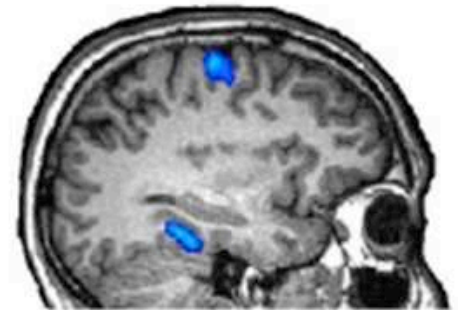
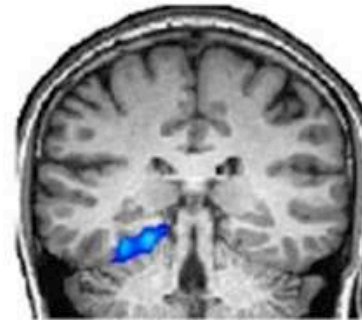
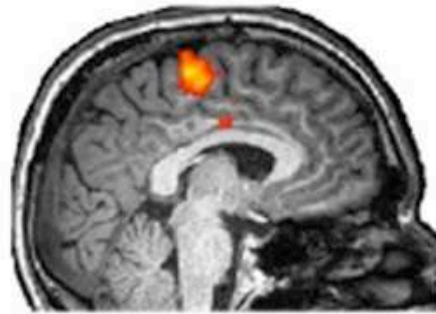
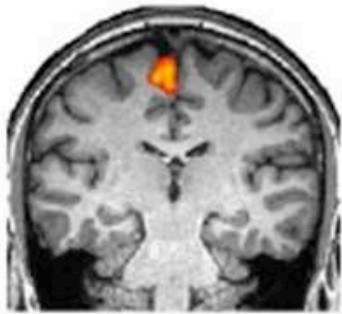


Lire les pensées avec le scanner



Communiquer via l'IRM

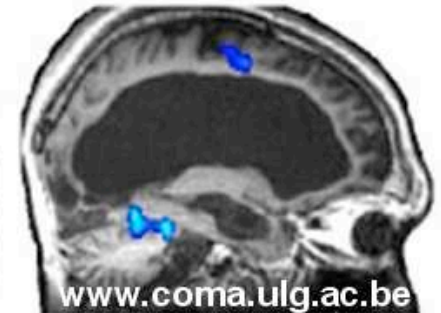
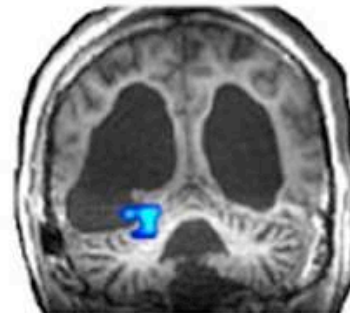
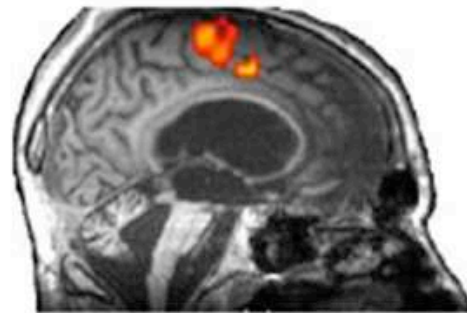
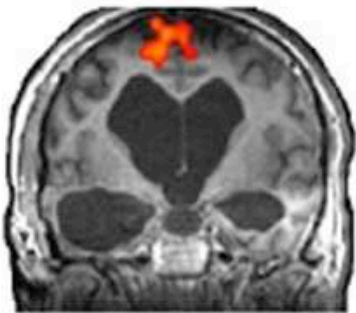
SUJET SAIN



Répond « OUI »

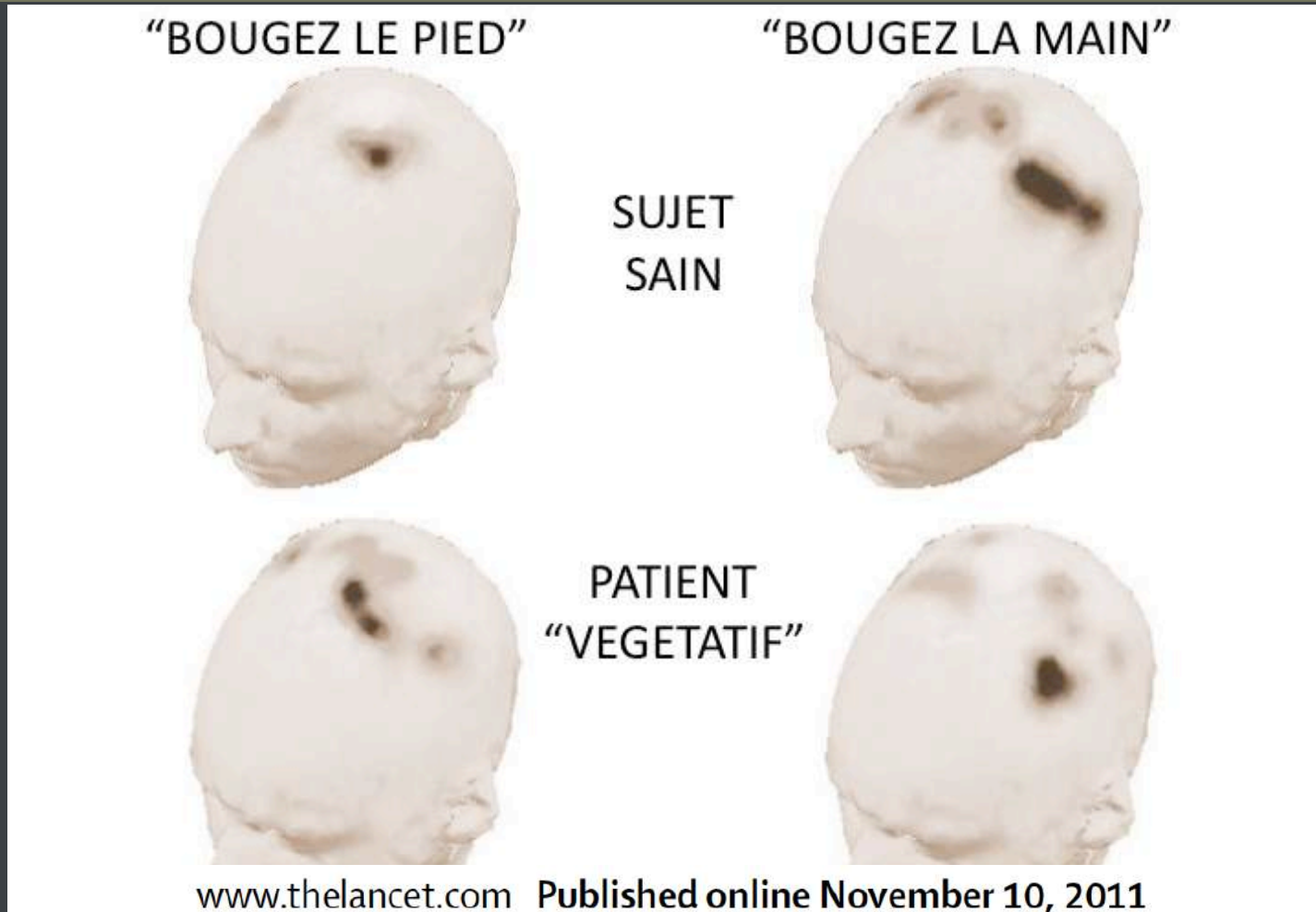
Répond « NON »

« ETAT VEGETATIF »



www.coma.ulg.ac.be

Interface cerveau ordinateur

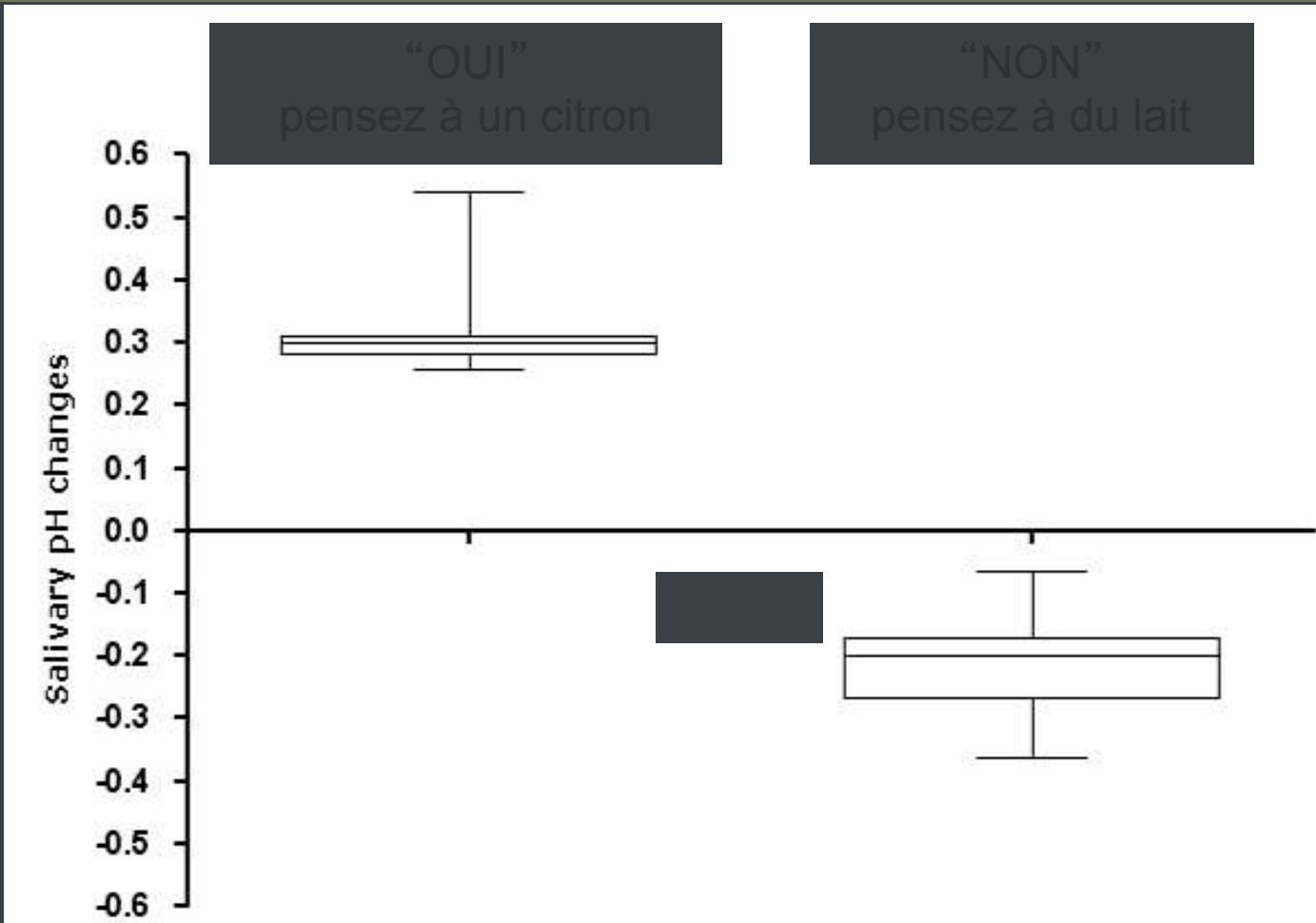


COMA

SCIENCE GROUP



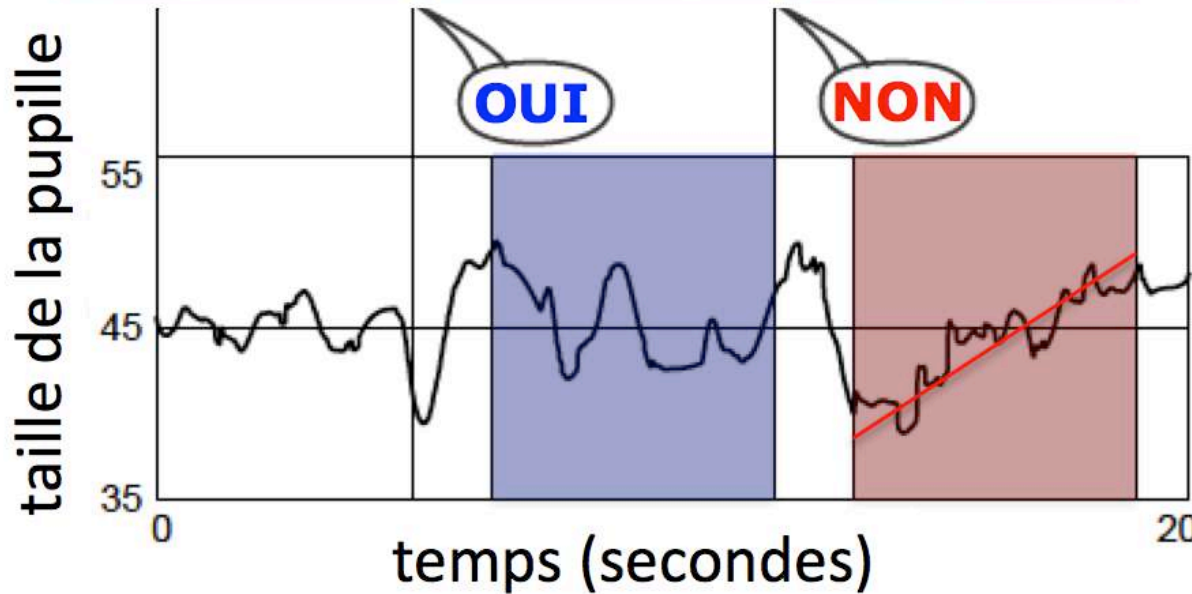
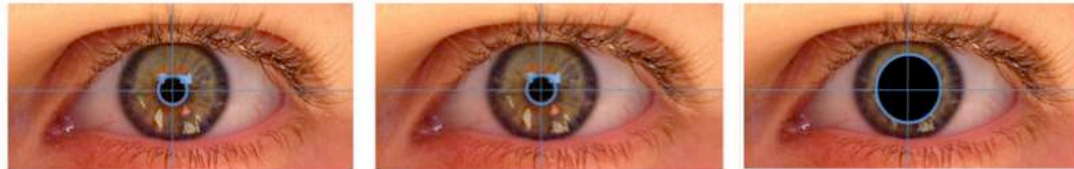
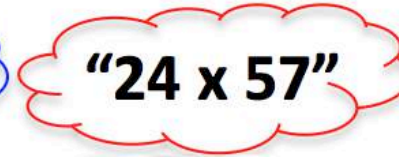
Communiquer via la salive



Interface cerveau ordinateur



**AS-TU
MAL?**



**Current
Biology**

Philipps



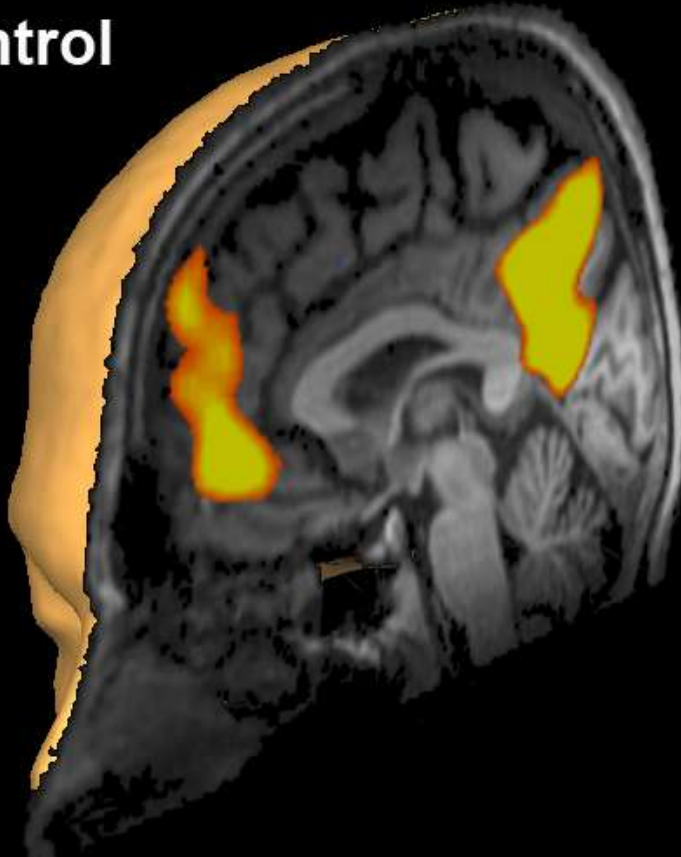
Universität
Marburg



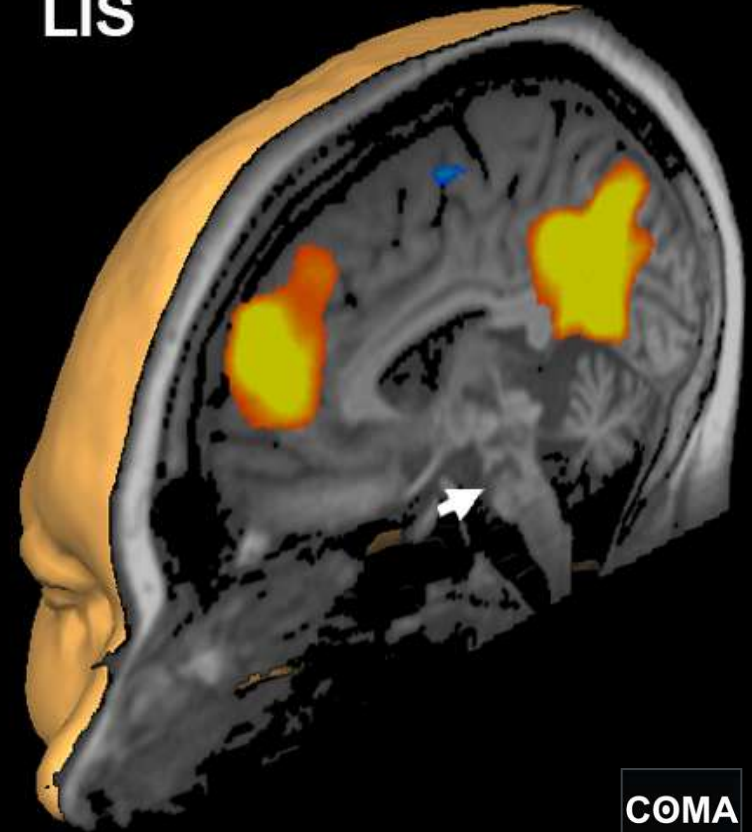
Mesurer la conscience



Control



LIS



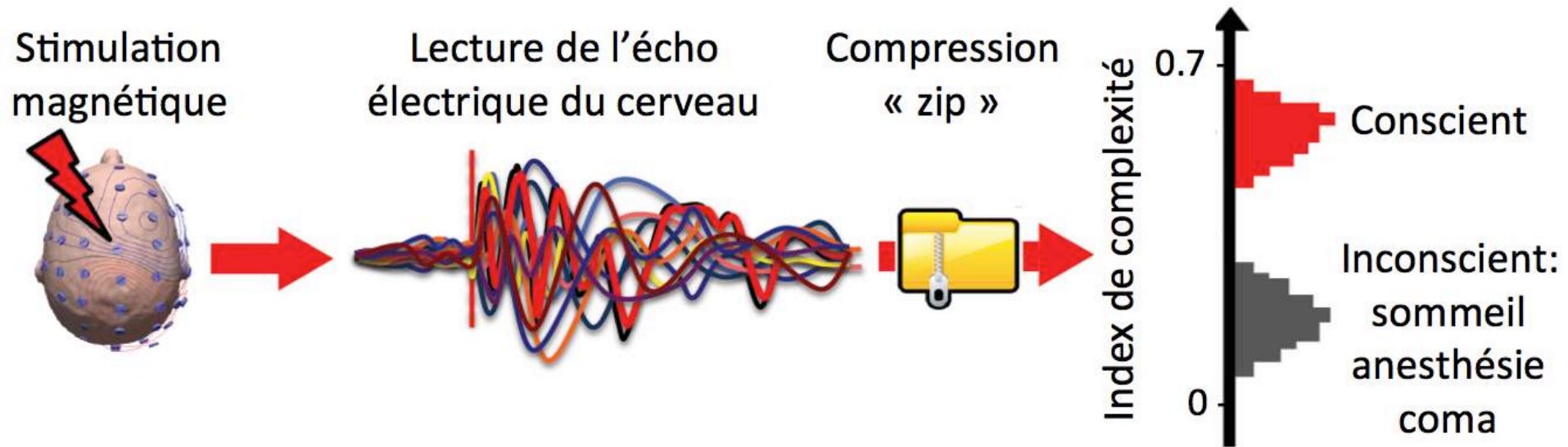
<http://neurology.thelancet.com>

COMA
SCIENCE GROUP

Mesurer la conscience

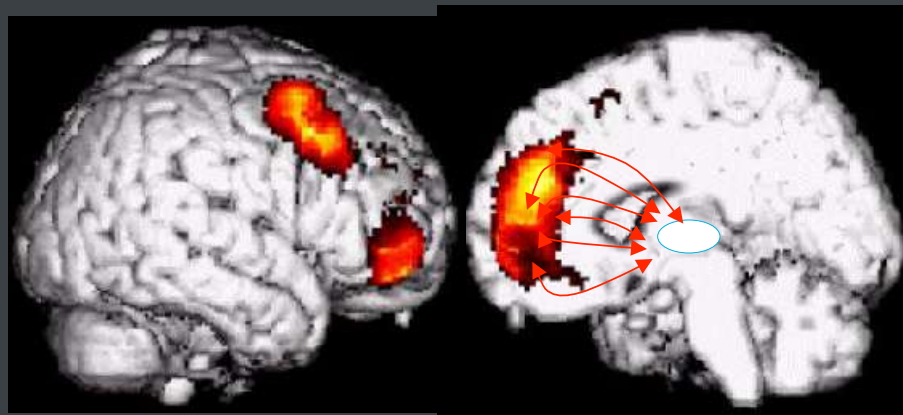


Mesurer la conscience



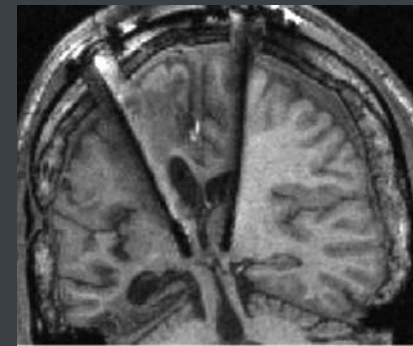
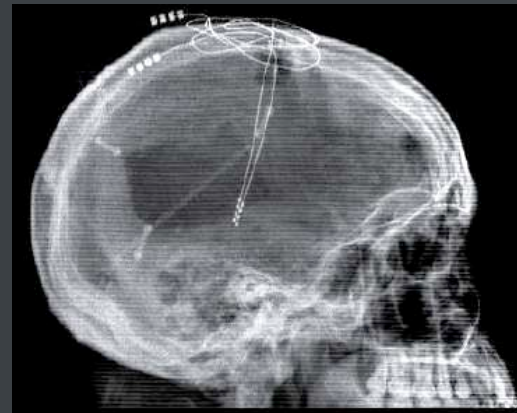
Conscience \approx connectivité

Noyaux intralaminaires se reconnectent lors de récupération spontanée de l'état "végétatif"



Laureys et al, Lancet 2000

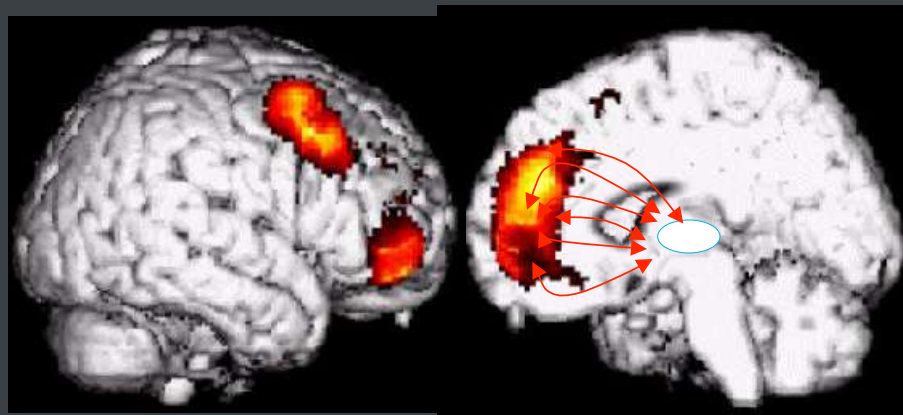
Stimulation des noyaux intralaminaires induit "récupération" en état de conscience minimal



Schiff et al., Nature 2007

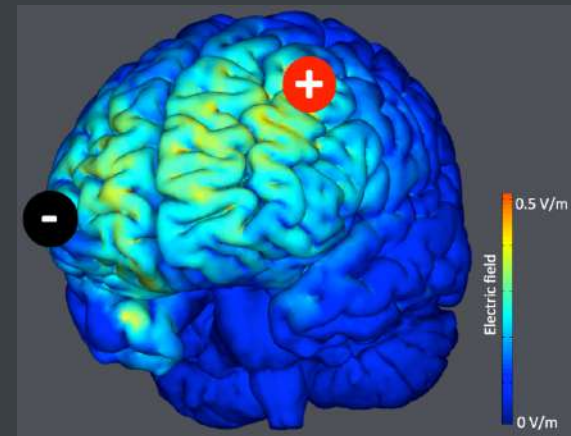
Conscience \approx connectivité

Noyaux intralaminaires se “reconnectent”
lors de récupération spontanée de l'état
“végétatif”



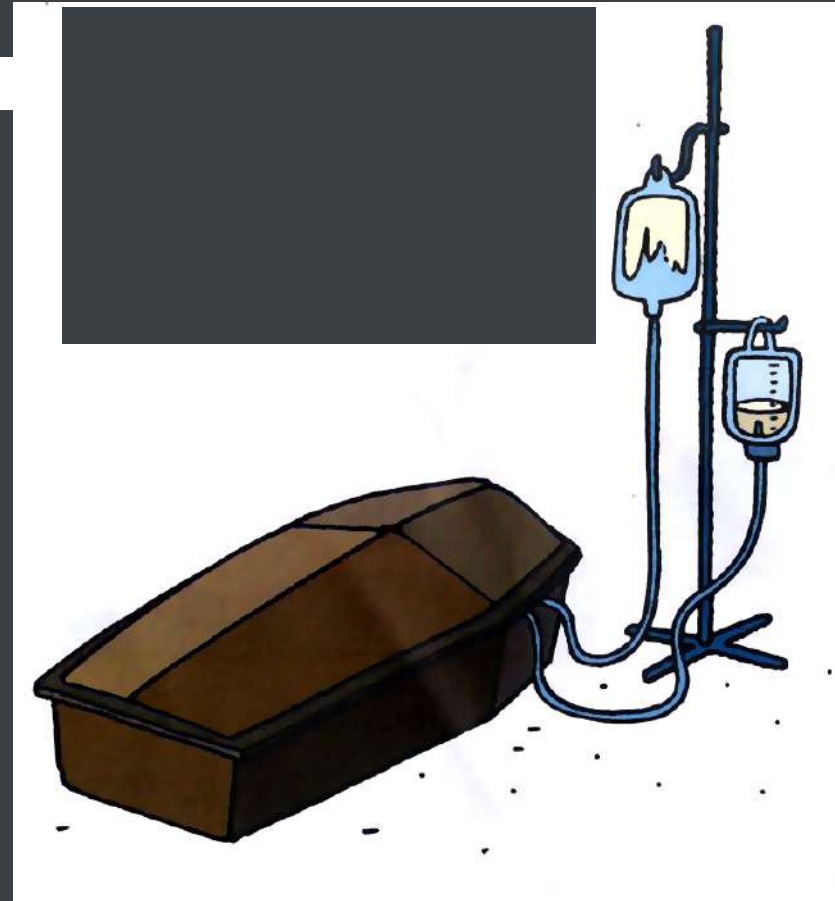
Laureys et al, Lancet 2000

Stimulation électrique transcranien (tDCS)



Thibaut et al, Neurology 2014

Ethique & fin de vie





Qualité de vie en locked-in

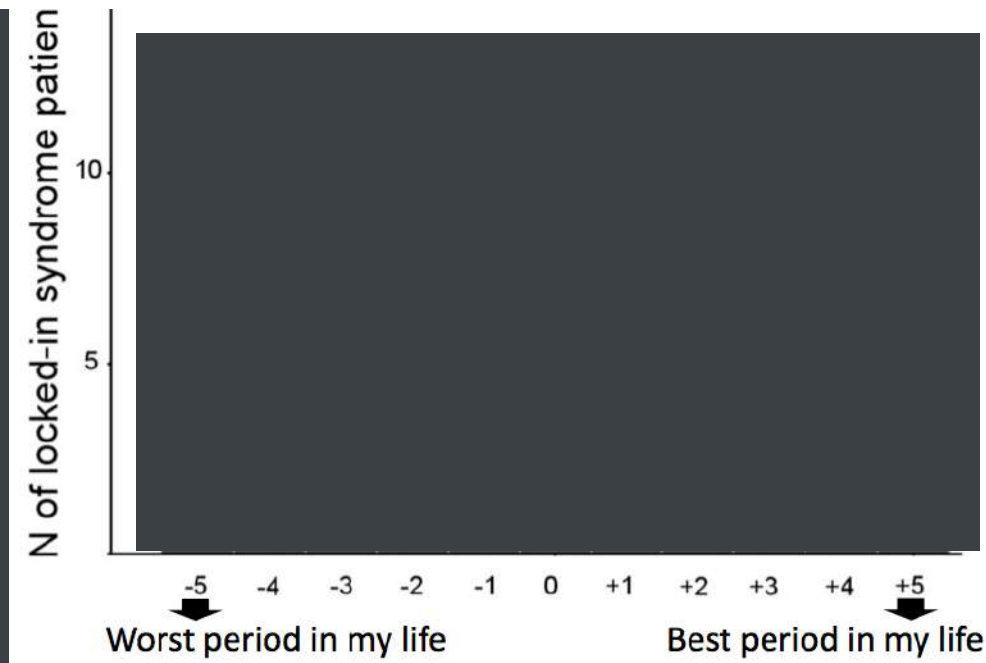
Open Access

Research




A survey on self-assessed well-being in a cohort of chronic locked-in syndrome patients: happy majority, miserable minority

Marie-Aurélie Bruno,¹ Jan L Bernheim,² Didier Ledoux,¹ Frédéric Pellas,³ Athena Demertzi,¹ Steven Laureys¹



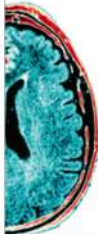



Dr Steven Laureys



Un si brillant cerveau

Les états limites de conscience

fnr's
FREEDOM TO RESEARCH



coma@ulg.ac.be



fnrs
FREEDOM TO RESEARCH



coma@ulg.ac.be

