Emozioni e cervello

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Daniela Ovadia

Agenzia Zoe - Informazione medica e scientifica

Dipartimento di neuroscienze- Ospedale Niguarda


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How to unleash the brain's inner genius


NewScientist
How beliefs can harm you


NewScientist
The 5 ages of the brain


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How your looks betray your personality
Revealed:
What happened when thousands of people took part in our face experiment

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Déjà vu
Why does history repeat itself?
Beware the genome hackers


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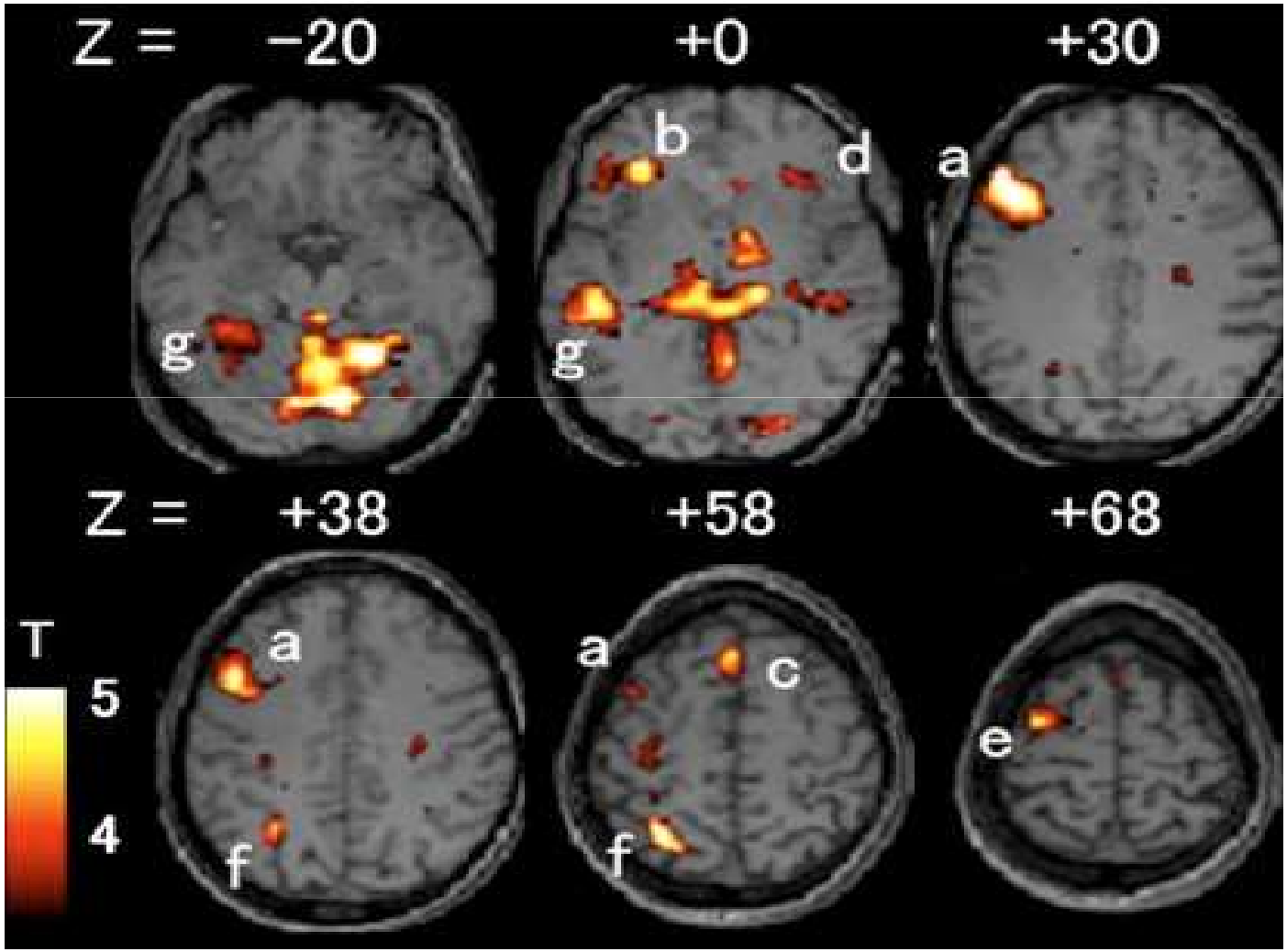
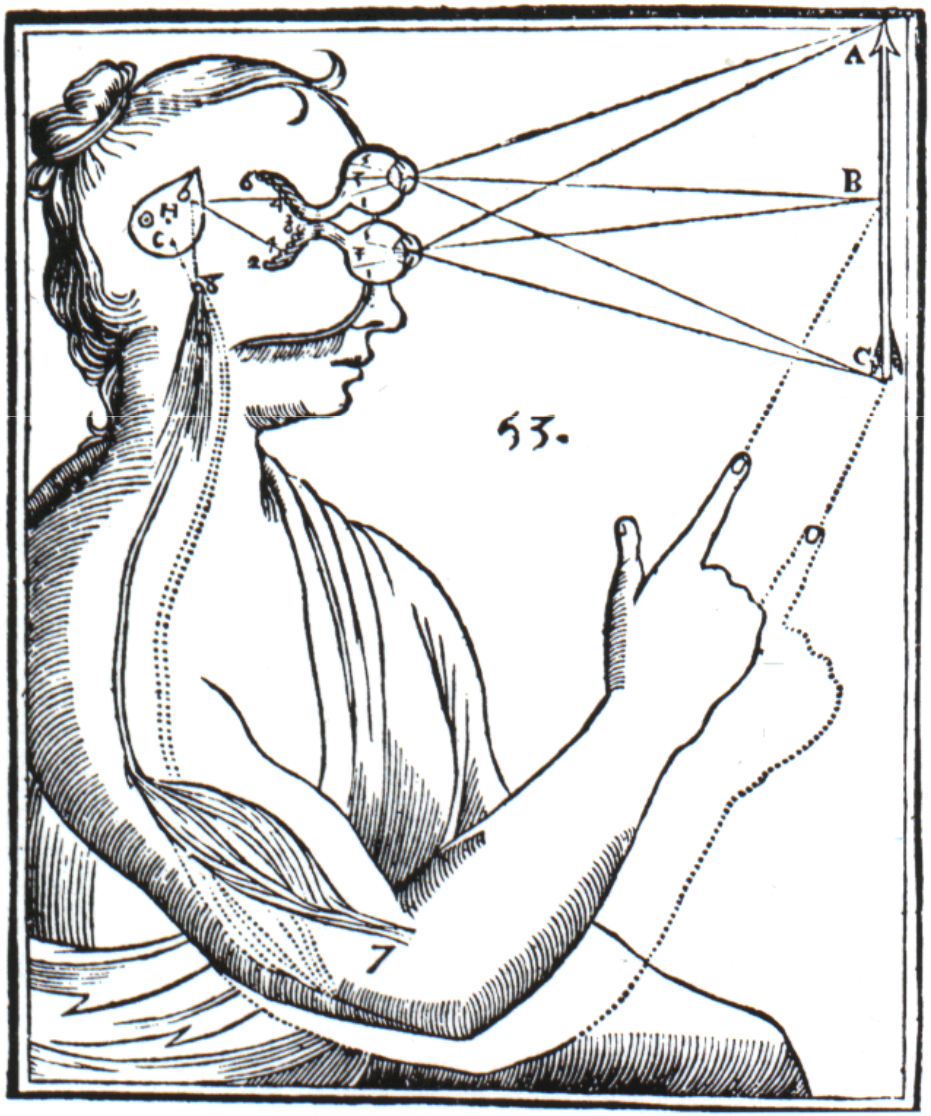
Born believers
How your brain creates God
BABIES IN BRAS


Why money messes with your mind

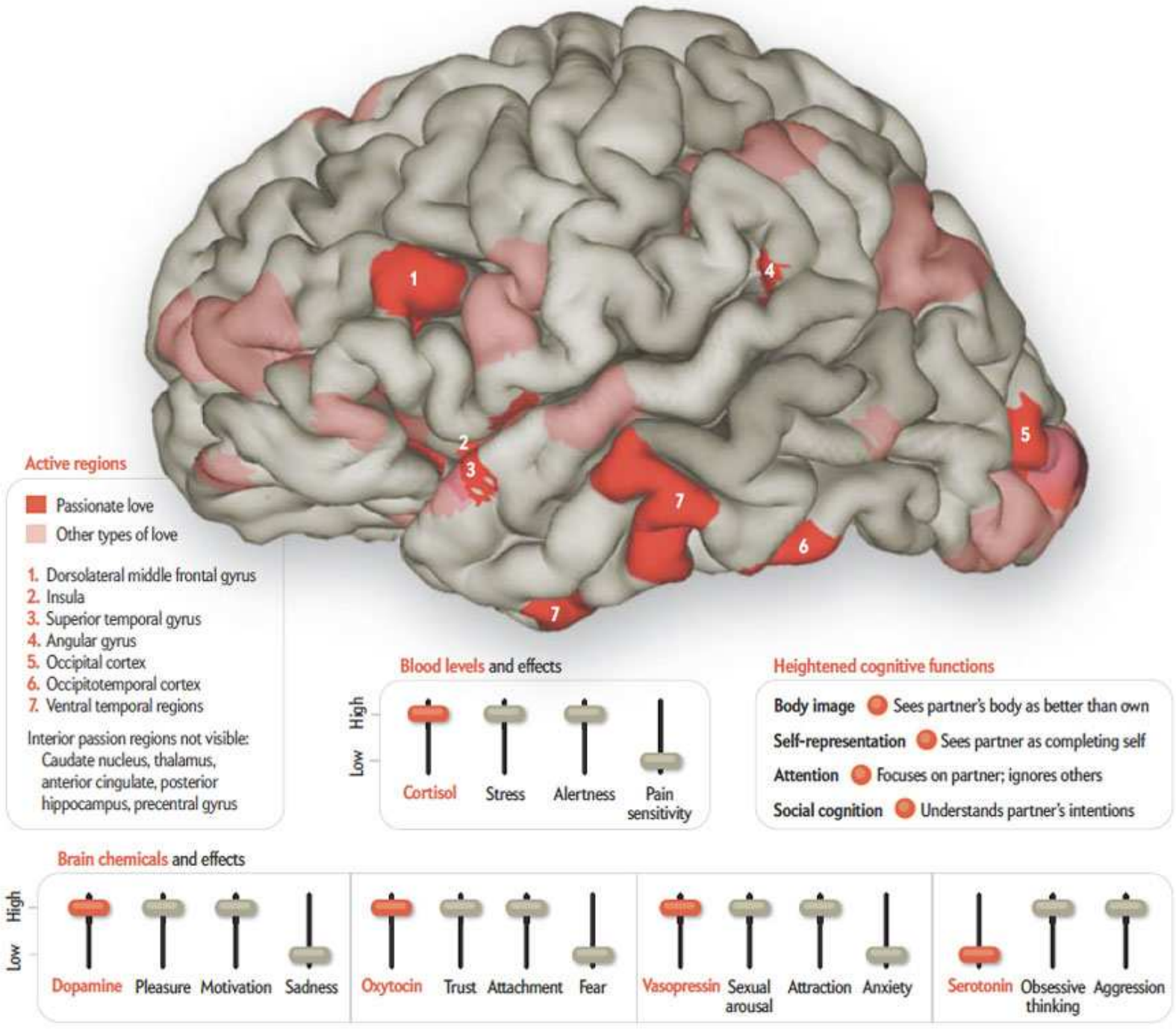
fMRI



Dualismo cartesiano



Des Cartes


Active regions
Passionate love
Other types of love
1. Dorsolateral middle frontal gyrus
2. Insula
3. Superior temporal gyrus
4. Angular gyrus
5. Occipital cortex
6. Occipitotemporal cortex
7. Ventral temporal regions
Interior passion regions not visible:
Caudate nucleus, thalamus, anterior cingulate, posterior hippocampus, precentral gyrus
1
2
3
4
5
6
7
7
Blood levels and effects
High
Low
Cortisol
Stress
Alertness
Pain sensitivity
Heightened cognitive functions
Body image
Sees partner's body as better than own
Self-representation
Sees partner as completing self
Attention
Focuses on partner; ignores others
Social cognition
Understands partner's intentions
Brain chemicals and effects
High
Low
Dopamine
Pleasure
Motivation
Sadness
Oxytocin
Trust
Attachment
Fear
Vasopressin
Sexual arousal
Attraction
Anxiety
Serotonin
Obsessive thinking
Aggression

nature neuroscience

Article abstract

Nature Neuroscience **12**, 515 - 522 (2009)
Published online: 1 March 2009 | doi:10.1038/nn.2277

Hierarchical cognitive control deficits following damage to the human frontal lobe

David Badre[1,2], Joshua Hoffman[3], Jeffrey W Cooney[3] & Mark D'Esposito[3,4]

Cognitive control permits us to make decisions about abstract actions, such as whether to e-mail versus call a friend, and to select the concrete motor programs required to produce those actions, based on our goals and knowledge. The frontal lobes are necessary for cognitive control at all levels of abstraction. Recent neuroimaging data have motivated the hypothesis that the frontal lobes are organized hierarchically, such that control is supported in progressively caudal regions as decisions are made at more concrete levels of action. We found that frontal damage impaired action decisions at a level of abstraction that was dependent on lesion location (rostral lesions affected more abstract tasks, whereas caudal lesions affected more concrete tasks), in addition to impairing tasks requiring more, but not less, abstract action control. Moreover, two adjacent regions were distinguished on the basis of the level of control, consistent with previous functional magnetic resonance imaging results. These results provide direct evidence for a rostro-caudal hierarchical organization of the frontal lobes.

nature neuroscience

ARTICLE

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Published online: 24 October 2004; | doi:10.1038/nn1339

Interactions between decision making and performance monitoring within prefrontal cortex

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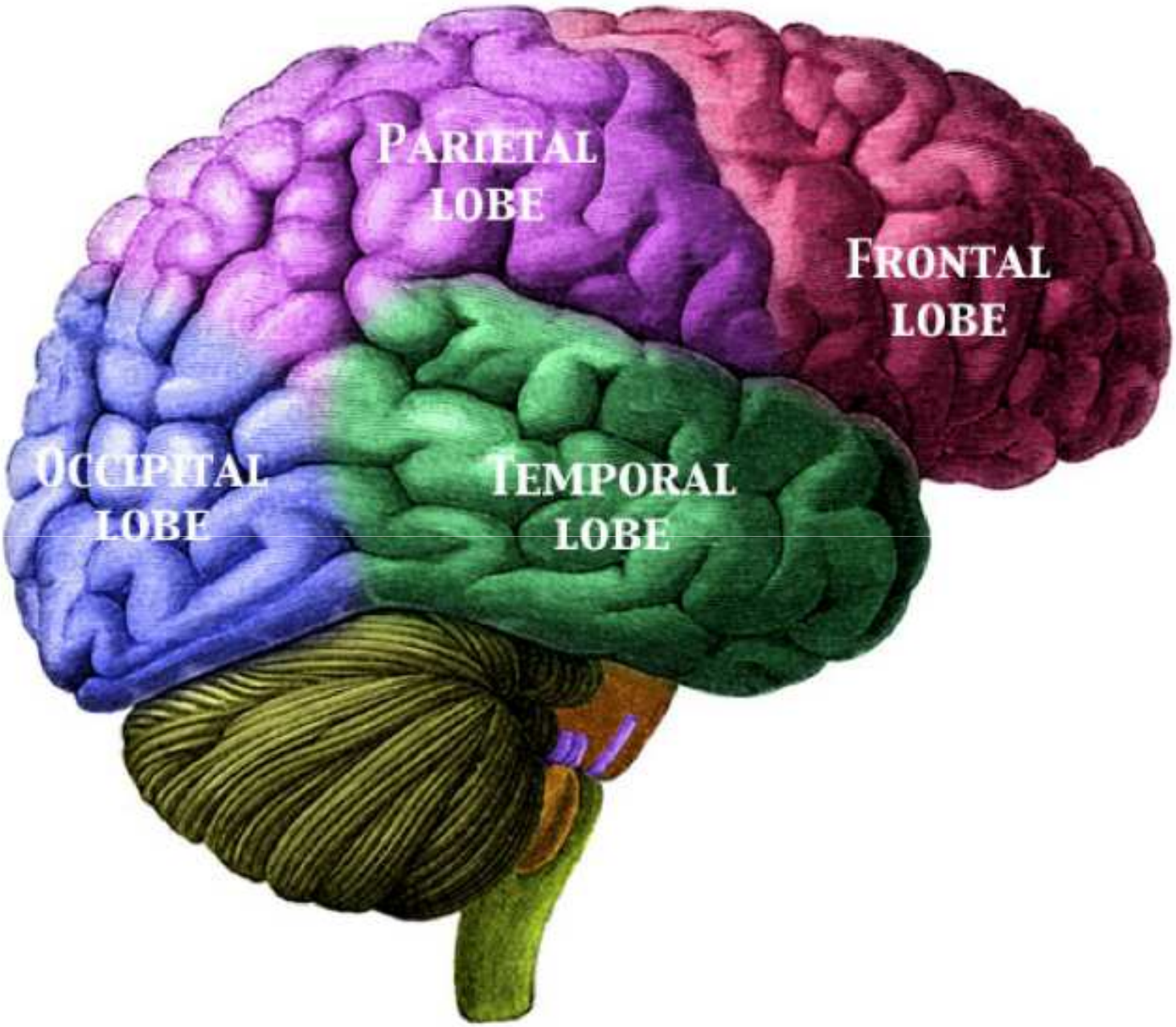
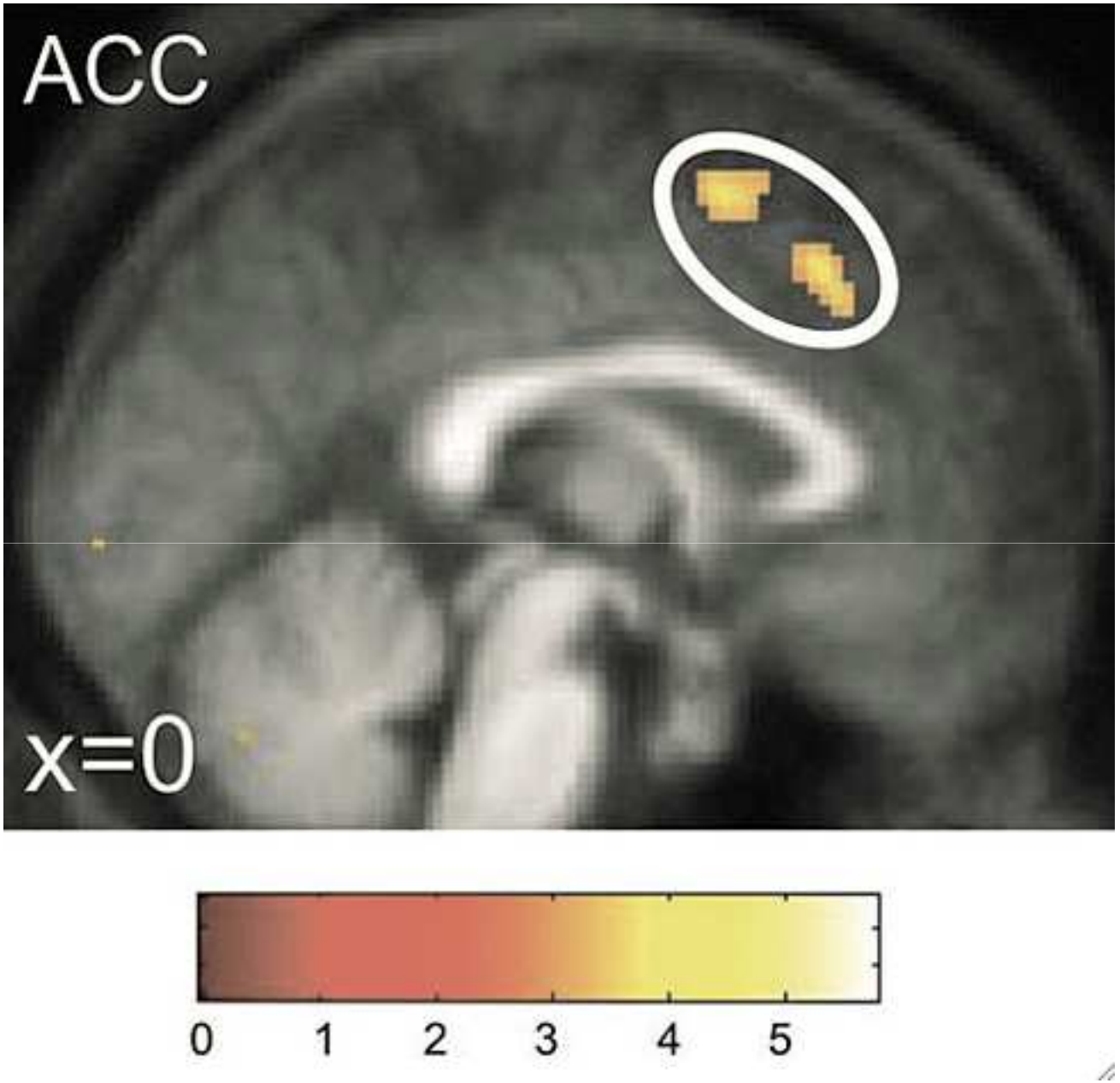
Our ability to judge the consequences of our actions is central to rational decision making. A large body of evidence implicates primate prefrontal regions in the regulation of this ability. It has proven extremely difficult, however, to separate functional areas in the frontal lobes. Using functional magnetic resonance imaging, we demonstrate complementary and reciprocal roles for the human orbitofrontal (OFC) and dorsal anterior cingulate cortices (ACd) in monitoring the outcome of behavior. Activation levels in these regions were negatively correlated, with activation increasing in the ACd and decreasing in the OFC when the selected response was the result of the participant's own decision. The pattern was reversed when the selected response was guided by the experimenter rather than the participant. These results indicate that the neural mechanisms underlying the way we assess the consequences of choices differ depending on whether we are told what to do or are able to exercise our volition.


PARIETAL LOBE
FRONTAL LOBE
OCCIPITAL LOBE
TEMPORAL LOBE


ACC
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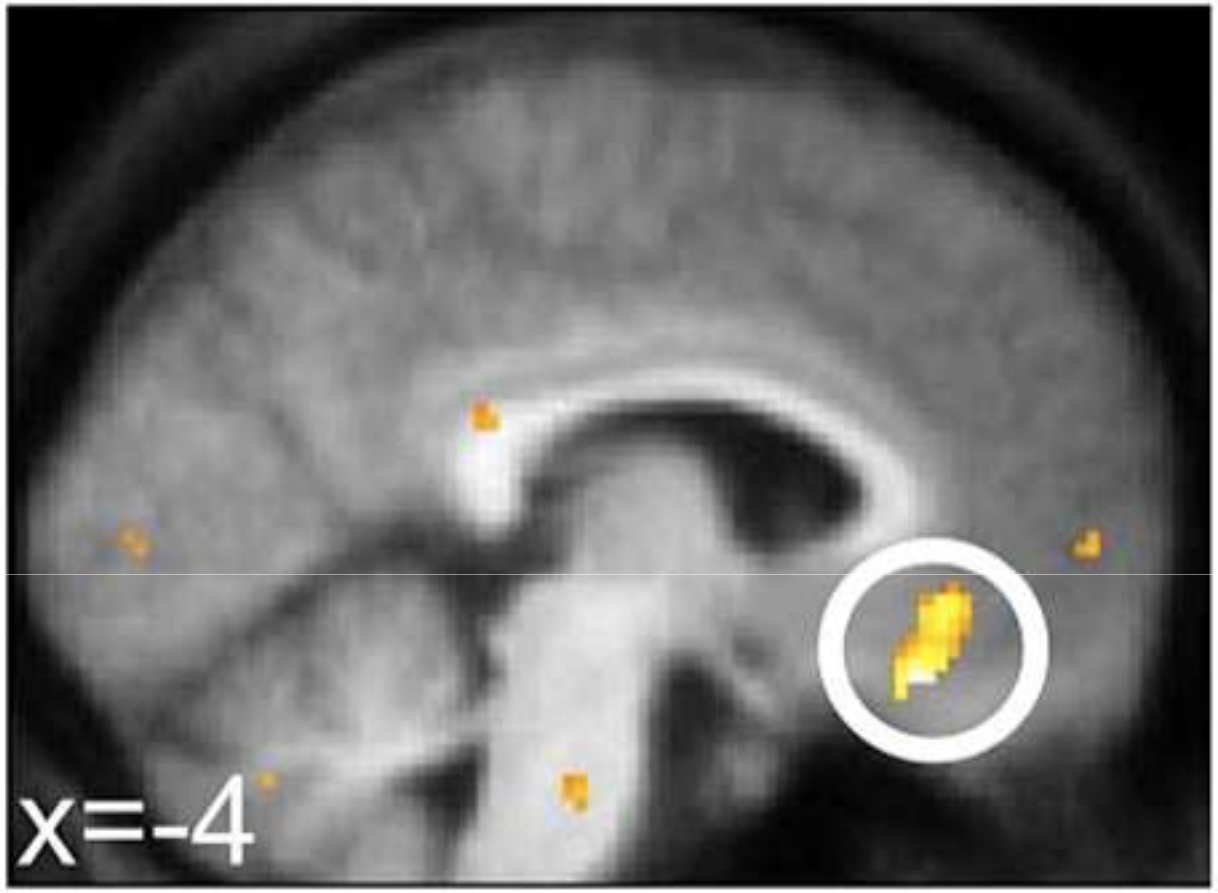
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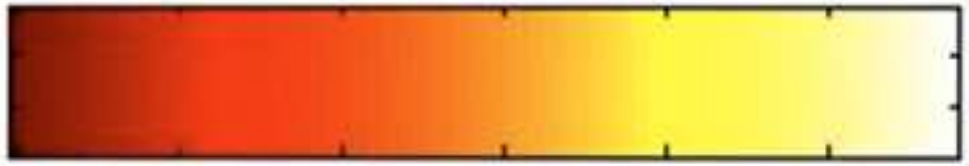
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