

Thursday, March 26th, 2020

D- ?



Rationalization

EFPP Psychotherapy wg #5

What the psychotherapist should know ?

Special Guest:

Dr Albert Moukheiber,

Phd in cognitive neurosciences Paris (2010) and clinical
psychologist,



<https://www.chiasma.co/> Founder, 2019,

in 2019, he published "Votre cerveau vous joue des
tours » (« Your brain is tricking you »)

Presenter

Dr Thomas Gargot,

Psychiatrist

Phd student in computer science, Paris

M Sc Cog Sci, Trained in MI and CBT

Former EFPT psychotherapy wg chair and IT secretary



La pitié Salpêtrière

Paradigms

- Split brain paradigm
- Cognitive dissonance theory

Paradigms

- **Split brain paradigm**
- Cognitive dissonance theory

Split brain (SB) paradigm

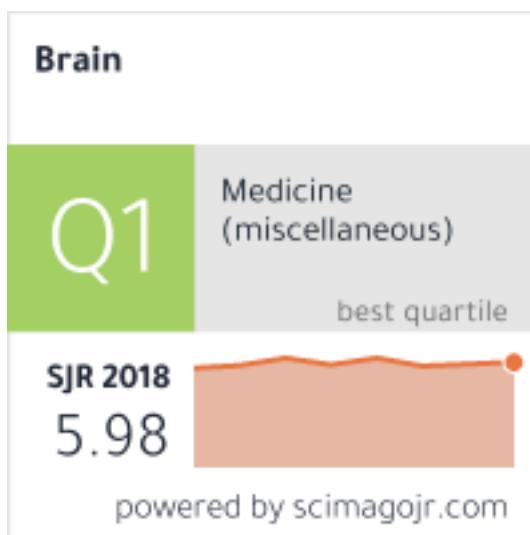
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Cerebral specialization and interhemispheric communication: does the corpus callosum enable the human condition?

[MS Gazzaniga - Brain, 2000 - academic.oup.com](#)

The surgical disconnection of the cerebral hemispheres creates an extraordinary opportunity to study basic neurological mechanisms: the organization of the sensory and motors systems, the cortical representation of the perceptual and cognitive processes, the ...

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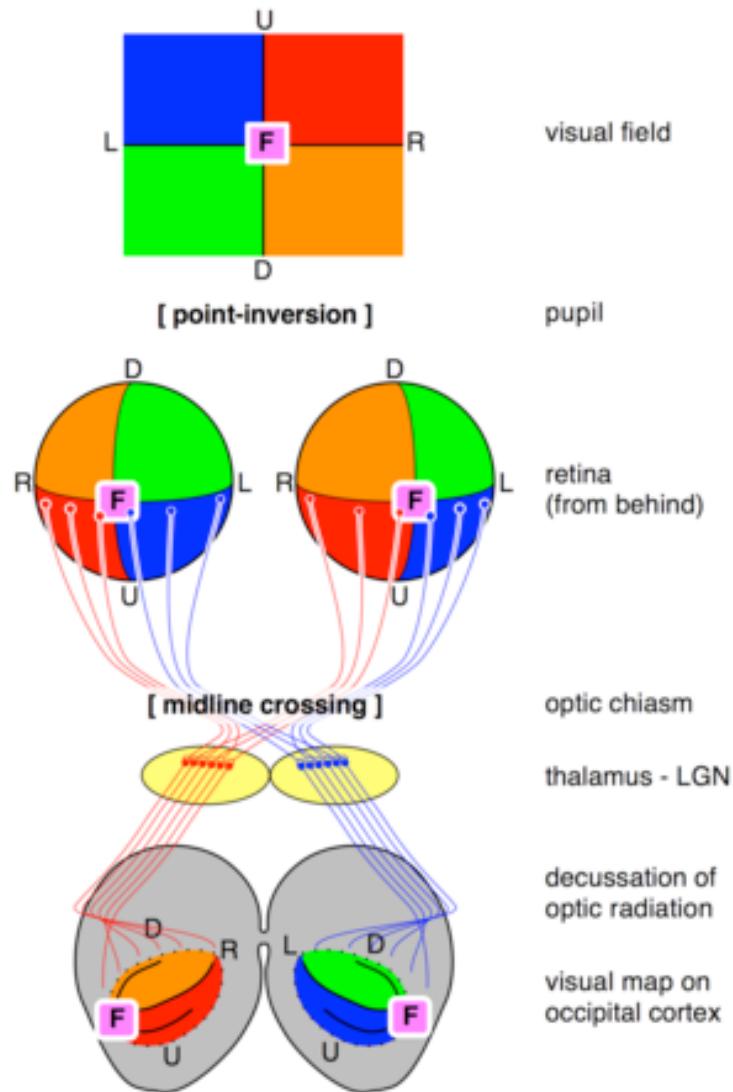
<https://www.scimagojr.com/>

H Index: 308
Impact Factor: 11.814

Here, narrative review paper

Brain decussation

- Contralateral
- Ipsilateral



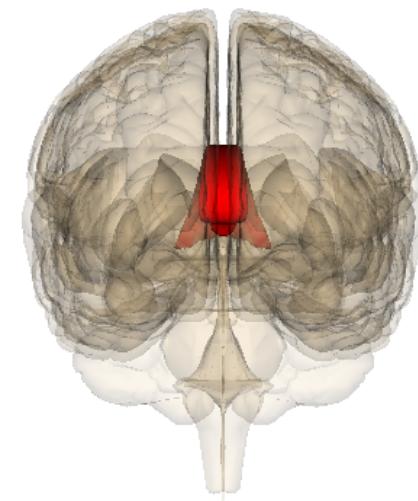
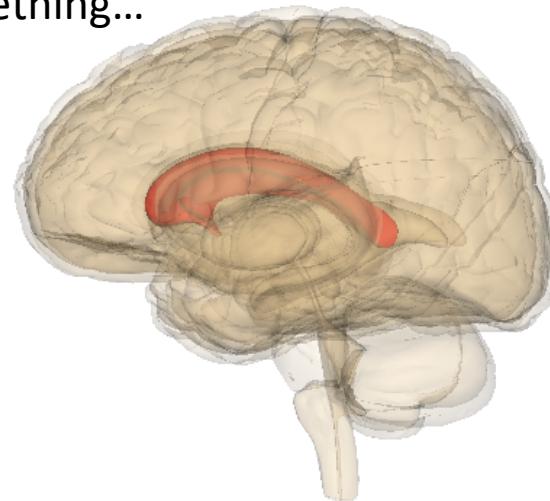
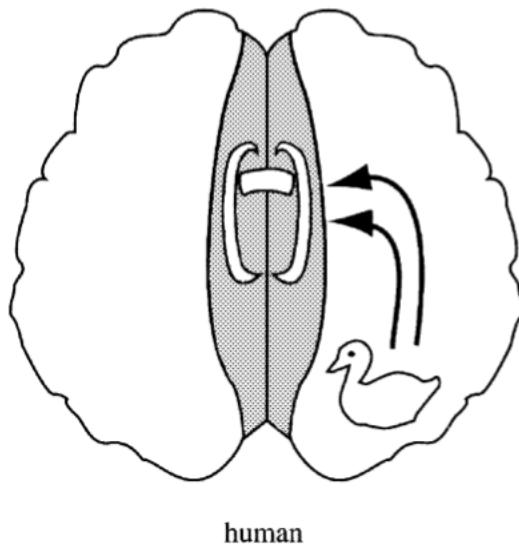
Lateralization

- Language : often Left hemisphere stroke: (aphasia)

Split brain

- Patient with generalized refractory epilepsy
- → Corpus callosotomy
- → Poor communication between the 2 cerebral hemispheres
- → Opportunity to study brain mechanisms, or relative role these hemispheres

The worse could be an opportunity to learn something...



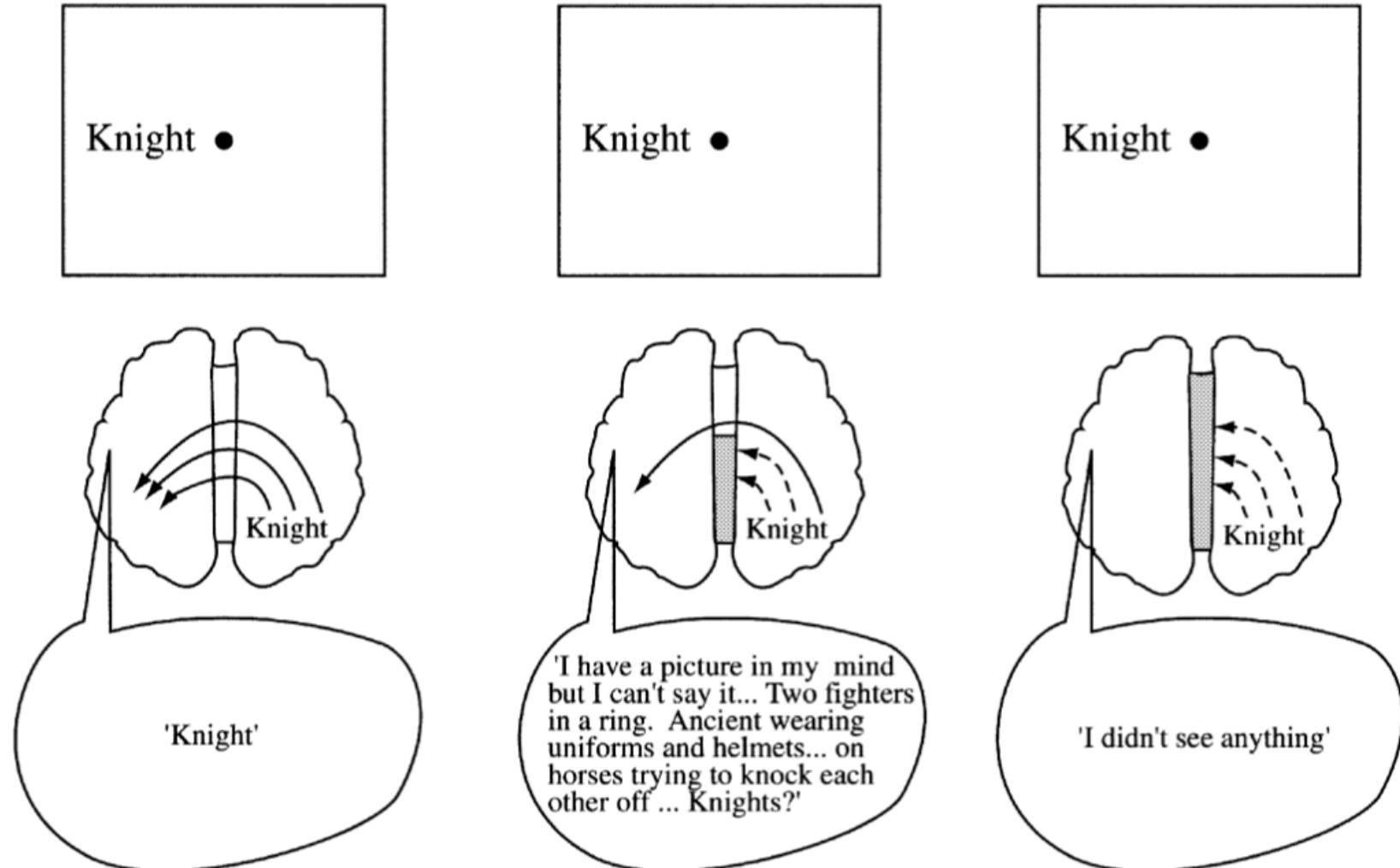


Fig. 14 Patient J.W. underwent a staged callosal section in which the posterior half of the callosum was sectioned before the anterior half. Prior to the surgery, J.W. had no difficulty reading words presented to the left visual field (*left panel*). Following posterior callosotomy, he was unable to read these words but could transfer semantic information about them (*centre panel*). After complete callosotomy, he was no longer able to transfer any information about the words (*right panel*). These results are consistent with the notion that anterior regions of the callosum are involved in the transfer of higher-order information (adapted from Sidtis *et al.*, 1981a).

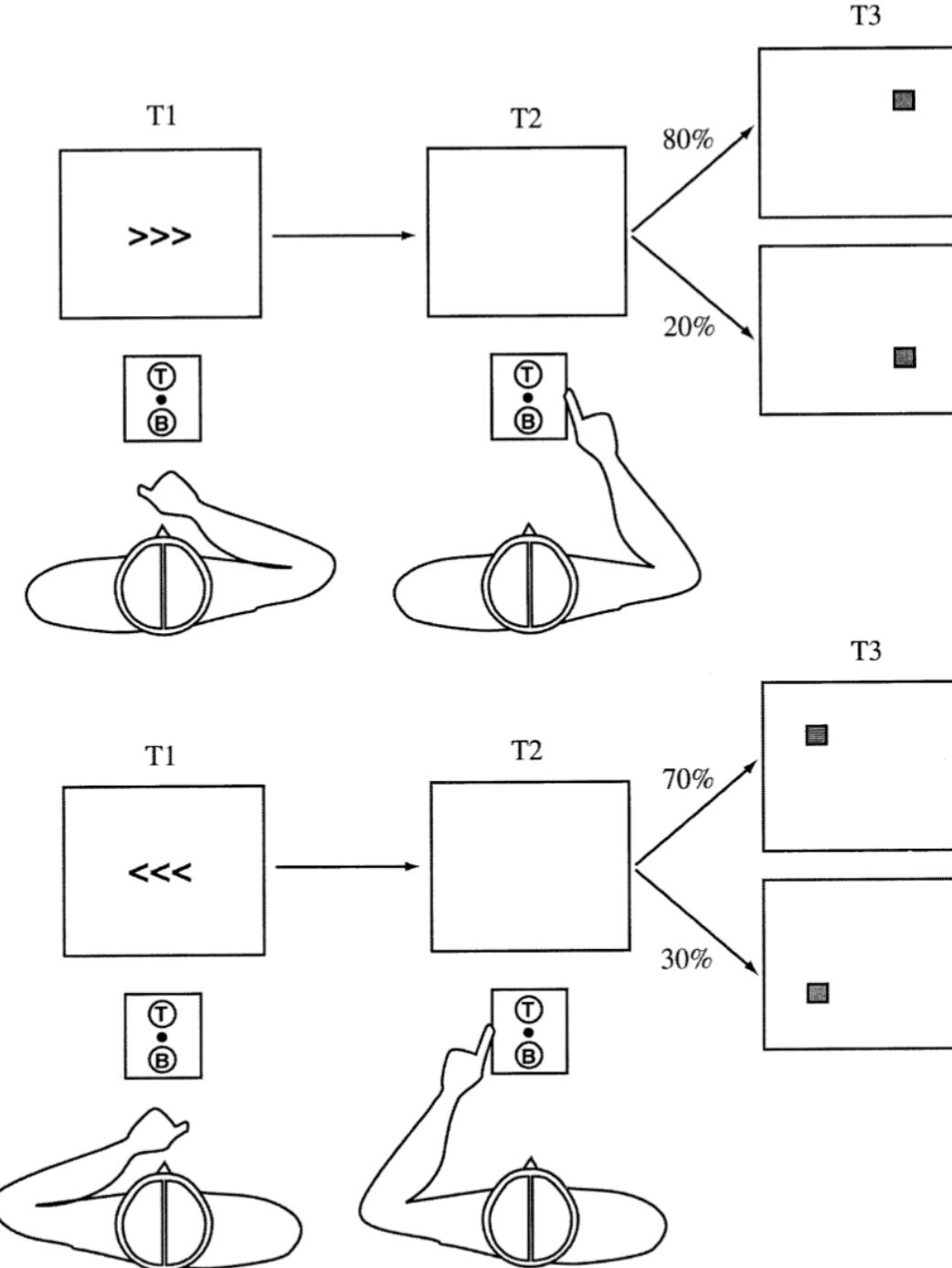
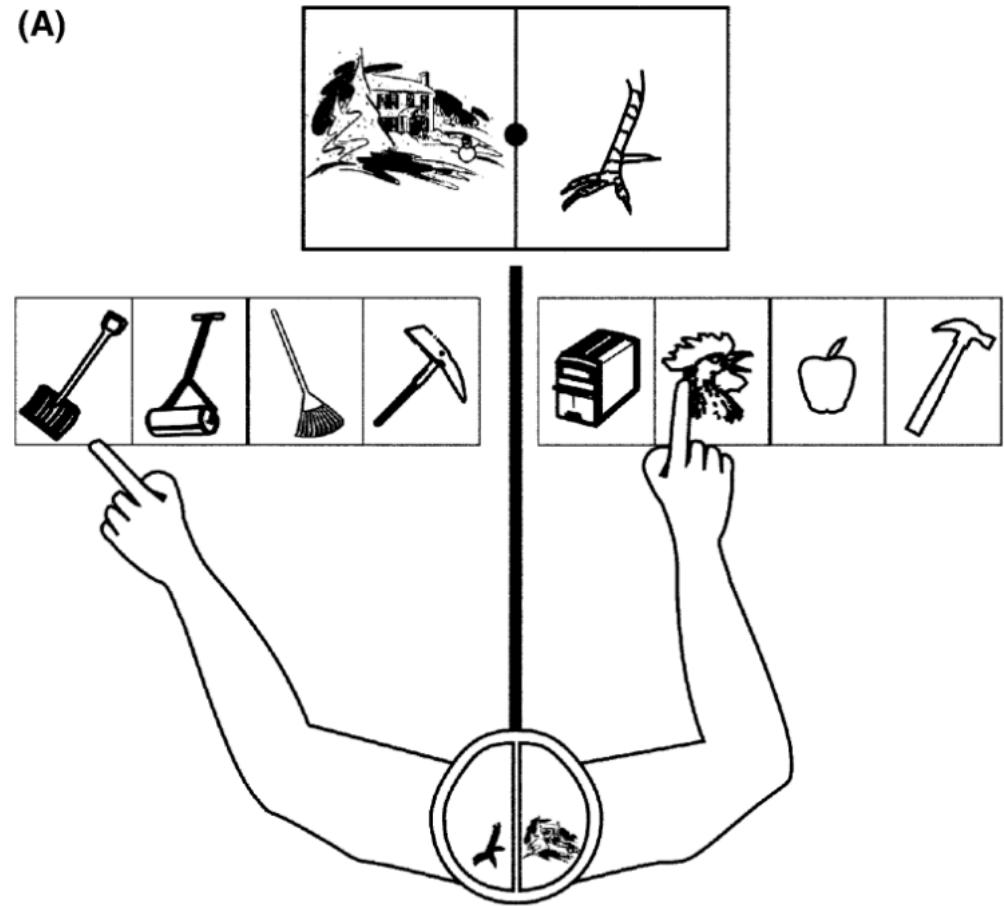


Fig. 18 Each hemisphere responds differently when challenged with the simple problem of trying to predict whether a light will appear above or below the horizontal meridian. The position of the light is determined randomly on each trial, the top position occurring 80% of the time for right-field/right-hand trials and 70% of the time for left-field/left-hand trials. After several blocks of trials the left hemisphere, like normal controls, distributes its responses between the two alternatives by matching the probability that each will occur (i.e. guesses 'top' ~80% of the time and 'bottom' ~20% of the time). As a result, it guesses less accurately than if a simple strategy of maximizing (always choosing the more probable alternative) were implemented. The right hemisphere, by contrast, does tend to choose the more probable alternative on each trial, which maximizes performance in the long term (adapted from Wolford *et al.*, 2000).

- **Maximizing-Best strategies** (rats, goldfish), Human right hemisphere in SB (but non dominant without SB)
- **Matching-Worst strategy** (Humans: try to find patterns even when knows it is random), Human Left hemisphere in SB ++
- The Left hemisphere tries to find order in chaos, forms hypotheses even when sequence is random

(A)

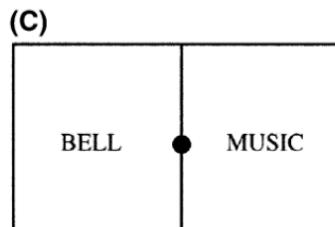


'Oh, that's simple. The chicken claw goes with the chicken, and you need a shovel to clean out the chicken shed'

Here the left brain, observing the left hand's response, interprets that response in a context consistent with its sphere of knowledge—one that does not include information about the left hemifield snow scene. We called this left hemisphere process '**the interpreter**'

Works also with positive or negative mood shift

(C) Patient J.W. was flashed the word ‘bell’ to his silent right hemisphere and the word ‘music’ to his left hemisphere. Again, each hemisphere was free to choose related pictures from a group. J.W. pointed to a picture of a bell, and when asked why said ‘Music—last time I heard any music was from the bells outside here, banging away’. J.W. was referring to the bells that ring regularly from the Dartmouth library.



The left hemisphere of split brain patients does not hesitate to offer explanations for behaviours which are generated by the right hemisphere

- Brain is constituted of a lot of specialized modules but we have a integrated and unified perception of ourselves
- Left brain has this interpreter role. It drives to seek explanations for why events occur
- When there is no obvious explanation for why we are aroused (e.g. pharmacological), we generate one => Spurious emotional cognitive correlations
- Left hemisphere construct theories to assimilate perceived information into a comprehensible whole (story-making, make inferences)
- SB don't feel dual consciousness

- **Left brain** job is to **interpret** our responses—cognitive or emotional—to what we encounter in our environment. The interpreter sustains a running **narrative of our actions**, emotions, thoughts, and dreams. The interpreter is the **glue** that keeps our story unified and creates our sense of being a coherent, rational agent. To our bag of individual instincts it brings theories about our life. These narratives of our past behaviour seep into our awareness and give us an auto-biography.
- Surely one question the device would ask is, '**Who is solving all these problems? Let's call it *me***'—and away it goes! A device with rules for figuring out how one thing relates to another will quickly be reinforced for having that capacity

- Our brains are operating before our conceptual self knows it.
- But the conceptual self emerges and grows until it can find interesting—but not disheartening—the biological fact that our brain does things before we are consciously aware of them.
- The interpretation of things that we encounter **has liberated us from a sense of being determined by our environment**; it has created the **wonderful sense that our self is in charge of our destiny**. All of our everyday success at reasoning through life's data convinces us of this. And because of the interpreter within us, we can drive **our automatic brains** to greater accomplishment and enjoyment of life.

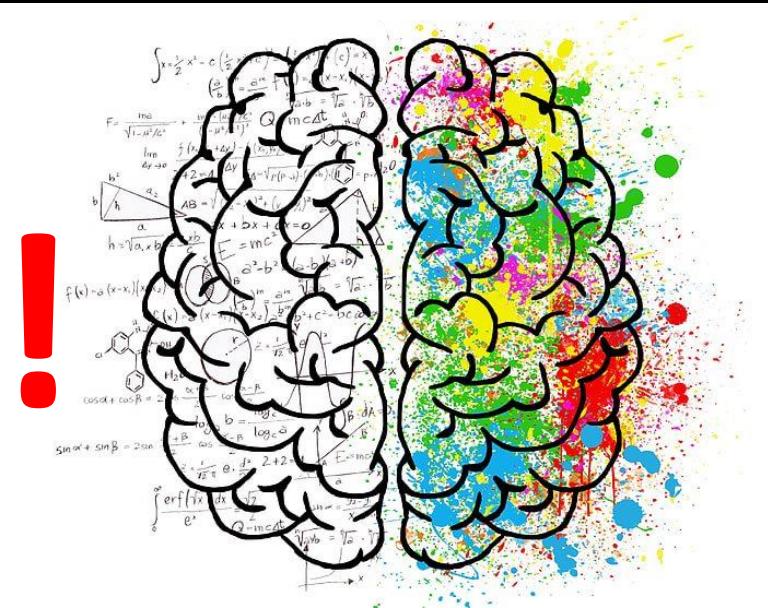
Abstract

- In 2000, we thought that neurobiological mechanism = neurological whereas they are as much relevant for the neurologist than for the psychiatrist...
- We can't understand physiology without understanding pathology and vice-versa
- Brain has specialized modules but is also plastic (but less and less), sorry for gerontopsychiatrist 😞
- “Myself” and “Free will” may be only specialized brain modules trying to give explanations about what is happening in “myself”
- Inconscious ~automatic/rapid/stupid in cognitive science

NO !



Neither!



Bullshit zone ?



Donald J. Trump 
@realDonaldTrump



I always treated the Chinese Virus very seriously, and have done a very good job from the beginning, including my very early decision to close the “borders” from China - against the wishes of almost all. Many lives were saved. The Fake News new narrative is disgraceful & false!

 311K 12:46 PM - Mar 18, 2020



 168K people are talking about this



Paradigms

- Split brain paradigm
- **Cognitive dissonance theory**

Cognitive dissonance theory

<https://scholar.google.com/>

On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort.

[PDF] cftn.ca

AJ Elliot, PG Devine - *Journal of personality and social psychology*, 1994 - psycnet.apa.org

Most empirical research investigating the motivational properties of cognitive dissonance has focused on the arousal component of dissonance rather than on the psychological component explicitly delineated by L. Festinger (1957). In 2 induced-compliance experiments, a self-report measure of affect was used to demonstrate that dissonance is experienced as psychological discomfort and that this psychological discomfort is alleviated on implementation of a dissonance-reduction strategy, attitude change. Experiment 1 ...

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<https://www.scimagojr.com/>



H Index: 328

Impact Factor: 5,9 (Psychology - Social: 4 of 63)

Here, experimental paper

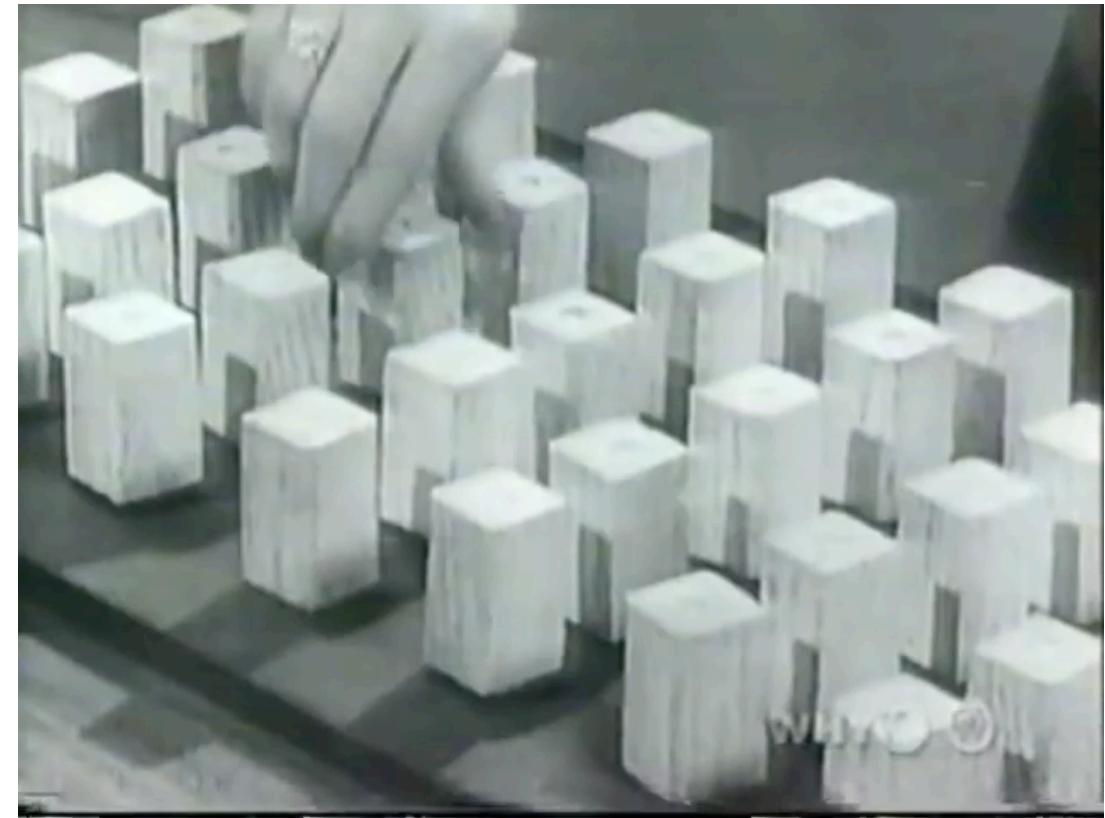
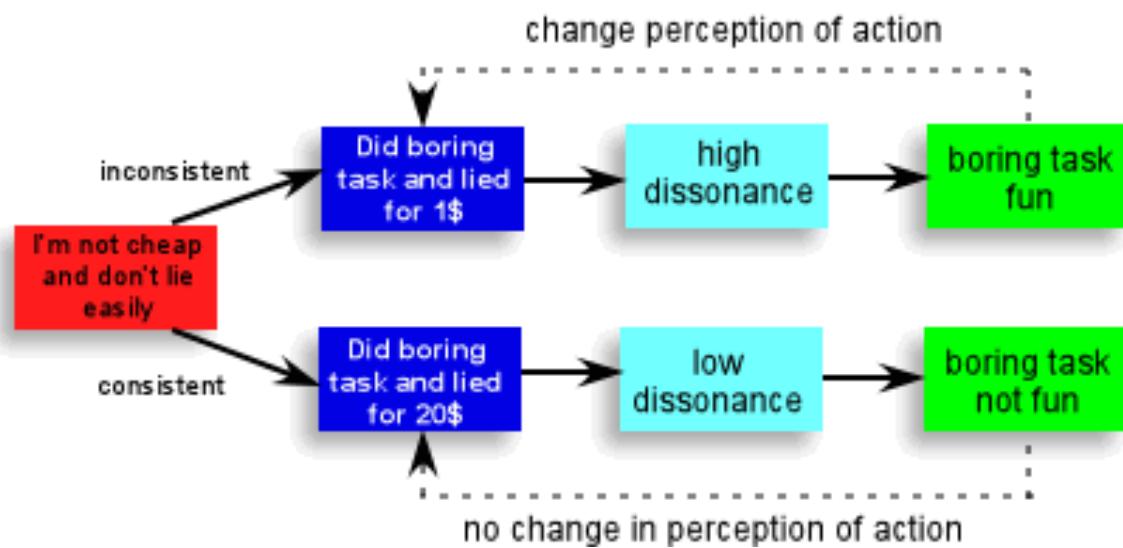
Theory

The perception of an inconsistency among an individual's cognition generates a negative intrapersonal state (dissonance), which motivates the individual to seek and implement a strategy to alleviate this aversive state (Festinger, 1957)

1. Dissonance induction: Subjects reporting their affect immediately after dissonance induction will show greater levels of discomfort than those for whom dissonance has not been induced.
2. Attitude change: Dissonance subjects will demonstrate greater attitude change than no-dissonance subjects.
3. Dissonance reduction: Immediately after changing their attitudes, dissonance-induction subjects will report levels of discomfort equivalent to that of no-dissonance subjects.

It is a drive, like hunger, a “cognitive theory with an engine”

Festinger original experiment

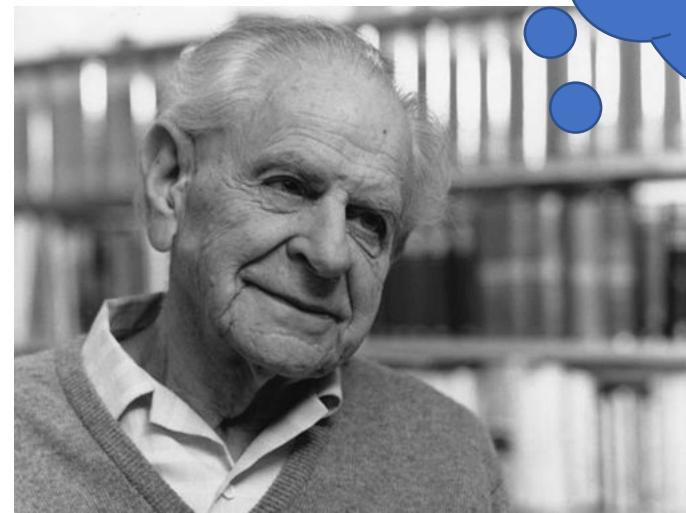


Festinger, 1957

[Video](#)



Social psychologist
experimental and theoretical
fight



“I love
experimental
fight” Popper
(1902-1994)

Self perception theory (Bem, 1967)

- E.g. If dissonance exists, then it is the result of cognitions inconsistent with the self concept (Aronson, 1968)
- Violation of well-internalized, self-defining standards generates general negative affect (e.g. discomfort) and a more specific self-directed aversiveness (e.g., guilt and self-criticism)

New look (Cooper and Fazio, 1984)

- Dissonance arousal ≠ Dissonance motivation
- 1. Dissonance arousal
 - Undifferentiated physiological arousal that may be labelled negatively and attributed internally
- 2. Dissonance motivation
 - This arousal becomes dissonance motivation “The psychological discomfort that motivates or drives the attitude change process”

Psychological tools

- Framing:
 - Dull/Boring task
 - Manipulating freedom (“Free will” perception or context (1\$/20\$ or “you are free”)



You lie to the subject (Mystification). Informed consent impossible a priori, so then, is it unethical ????

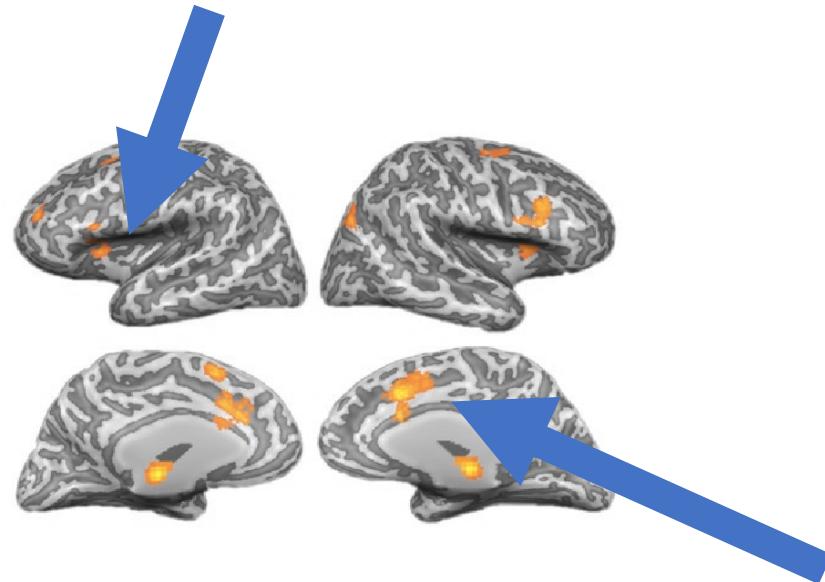
- Counterattitudinal essay (“Neurology is nicer than psychiatry”)
- Questionnaire to assess attitude

Physiological tools



Ekin and Leippe, 1986

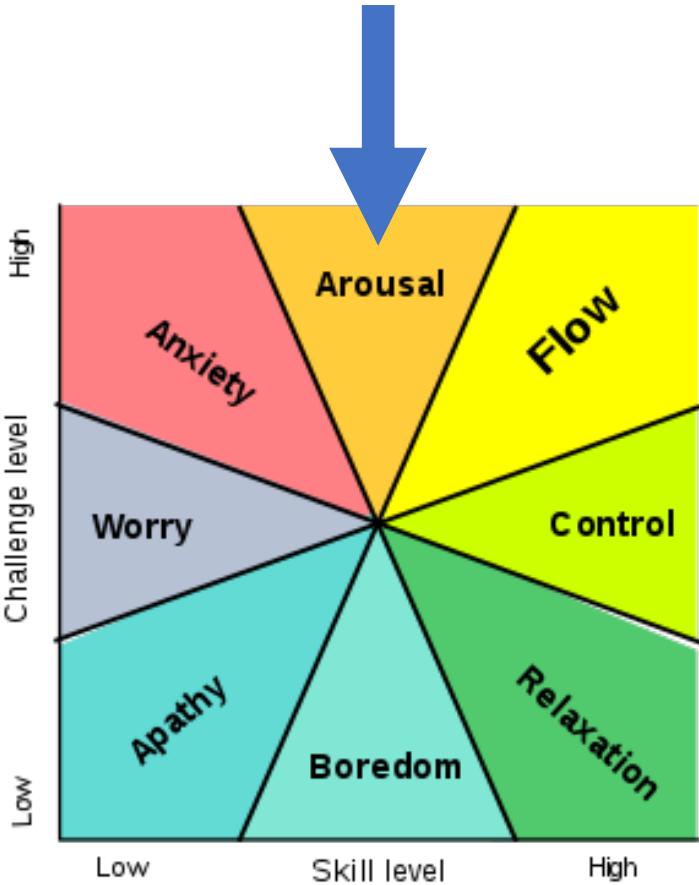
Insula (pain,
negative emotion)



AAC (Conflict,
error monitoring)

Van veen, 2009

Arousal state



Csíkszentmihályi, 1990

Conclusion

- Gazzaniga studied surgery patients who had a split brain, meaning, their left hemisphere is not communicating with their right hemisphere
- It allows to study a special cerebral module which role is to give meaning and explanation about what is happening in ourselves and our environment sometimes independently of the causes that determine us
- Single case studies of rare pathologies can be more insightful
- Festinger discovered cognitive dissonance. People need to resolve their inconsistency in a context of freedom by changing their thoughts (attitude) or behaviours
- This could be done by a rationalization despite a context controlled by the experimenter
- There is nothing is more practical than a good theory (Lewin, 1952)
- This resolution of consistency could be used in psychotherapy

And the psychotherapist ?



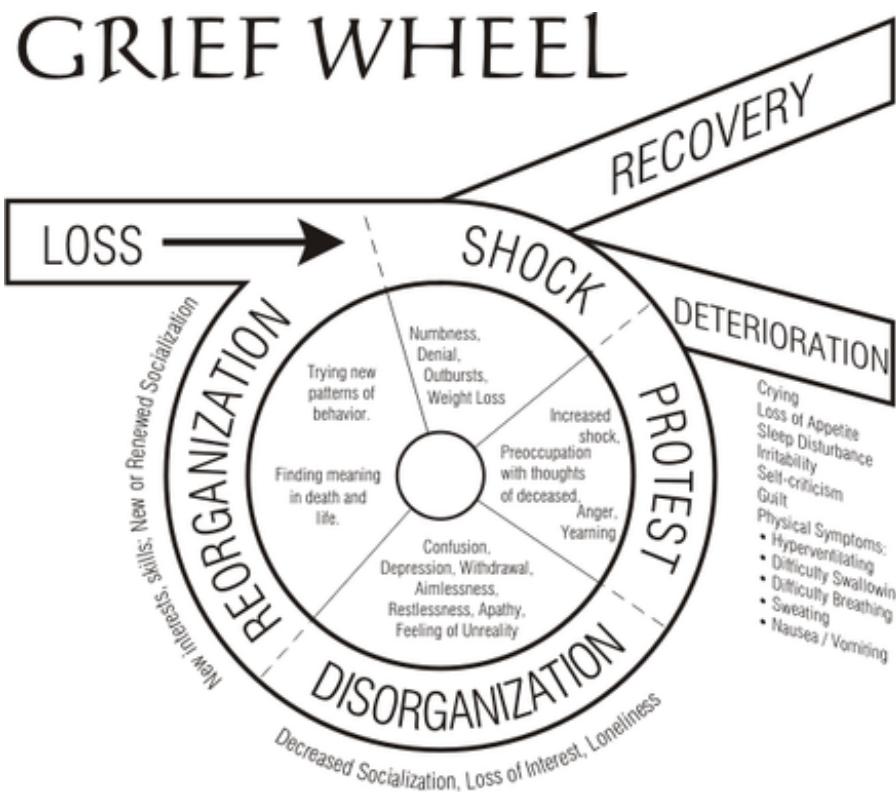
Danger zone,
no roads made so far



And the psychotherapist ?

- We are full of biases. Like a car driver, we have blind spots. Use different context, the group to give you feedback since, who you are and pathology is what is repeating in different contexts
- People need to make a story about themselves (psychoanalysis, narrative therapy, art therapy)
- Don't give advice or orders to your patients ("righting reflex"). They would eventually change if they may feel inconsistent in a context of freedom (Patient centered therapy-Motivational interviewing, self determination theory: intrinsic motivation).
- People are rationalizing and producing thoughts that may be reinforced by some environment, historical reinforcements ("automatic thoughts"). Reinforcement is driving only extrinsic motivation which seems weaker than intrinsic one, Self-determination theory (Deci and Ryan, 1991)
- We have thoughts and it is ok (ACT, MBSR). But these thoughts are only a point of view on the reality we are experiencing ("low attitude", "avoid expert mode"). Just try to be empathic, it is a good start (dodo effect). Share experiences on the reality in a judgemental and humble way (systemic therapy)

Rationalizing could evolve through time



Don' be normative ! Everyone has its own pace, and can skip a stage

The Cycle of Change

Prochaska & DiClemente

- Precontemplation: A logical starting point for the model, where there is no intention of changing behavior; the person may be unaware that a problem exists
- Contemplation: The person becomes aware that there is a problem, but has made no commitment to change
- Preparation: The person is intent on taking action to correct the problem; usually requires buy-in from the client (i.e. the client is convinced that the change is good) and increased self-efficacy (i.e. the client believes s/he can make change)
- Action: The person is in active modification of behavior
- Maintenance: Sustained change occurs and new behavior(s) replaces old ones. Per this model, this stage is also transitional
- Relapse: The person falls back into old patterns of behavior
- Upward Spiral: Each time a person goes through the cycle, they learn from each relapse and (hopefully) grow stronger so that relapse is shorter or less devastating.



The Cycle of Change
Adapted from a work by Prochaska and DiClemente (1983) | Ignacio Pacheco
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So what

- Sorry, I am rationalizing and trying to make of all of this
- There is a need of interdisciplinary work between cognitive sciences and psychotherapy (Holmes, 2018)
- Life is profoundly unfair and irrational. Only behaviour to respect our needs and humour will save us ?



Diogenes the Cynic (412-323 BC)