Prospettive di ricerca-azione nei contesti territoriali

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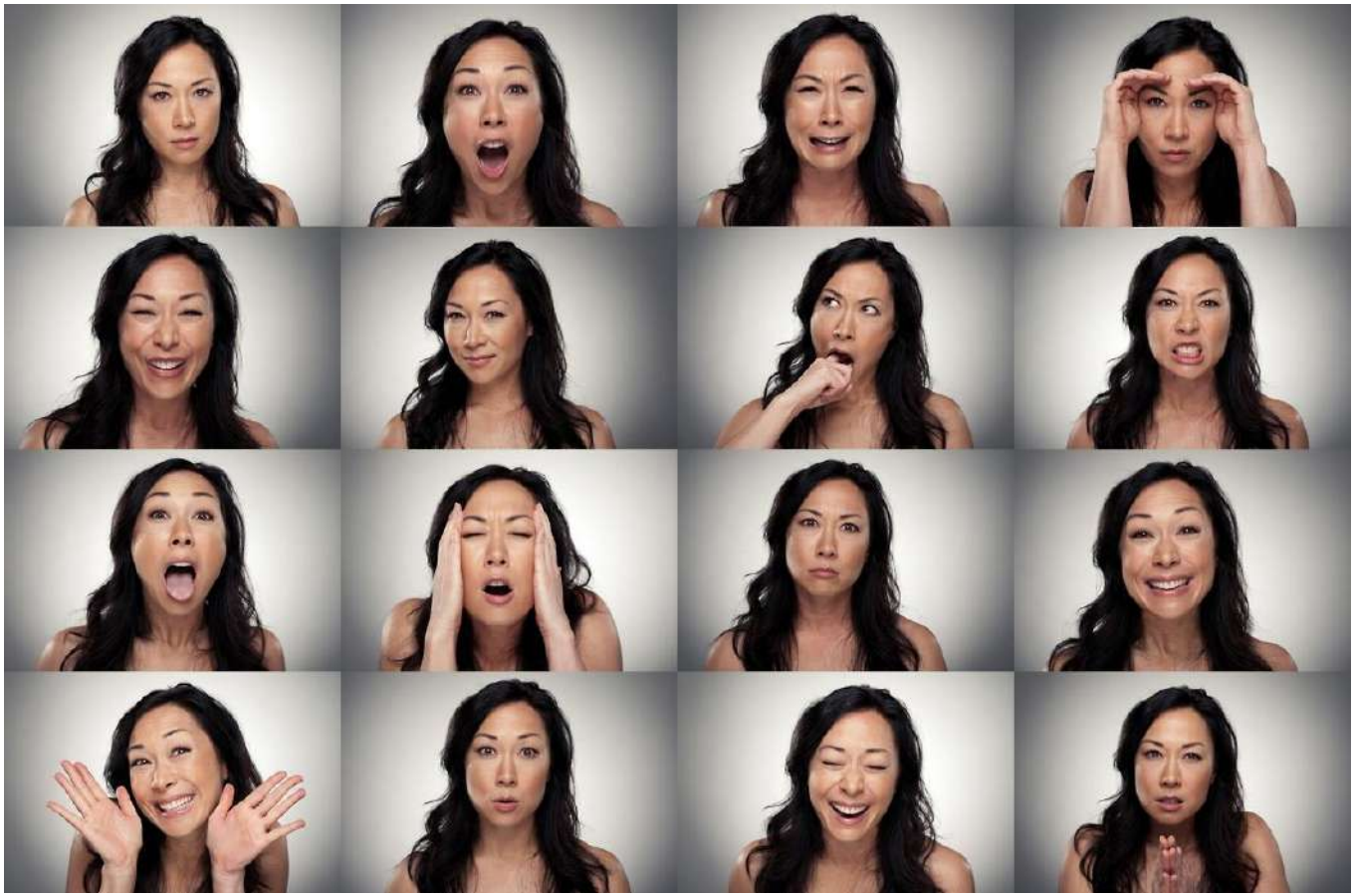
SCUOLA INTERNAZIONALE
SUPERIORE di STUDI AVANZATI
International School
for Advanced Studies

Area Neuroscienze
Laboratorio Interdisciplinare per le Scienze Naturali e Umanistiche

Emozioni in regola

Progetto di ricerca/azione
SISSA – ASUITS – AAS3 – dipartimento di prevenzione FVG



JUST/2014/ACTION GRANTS

RISE

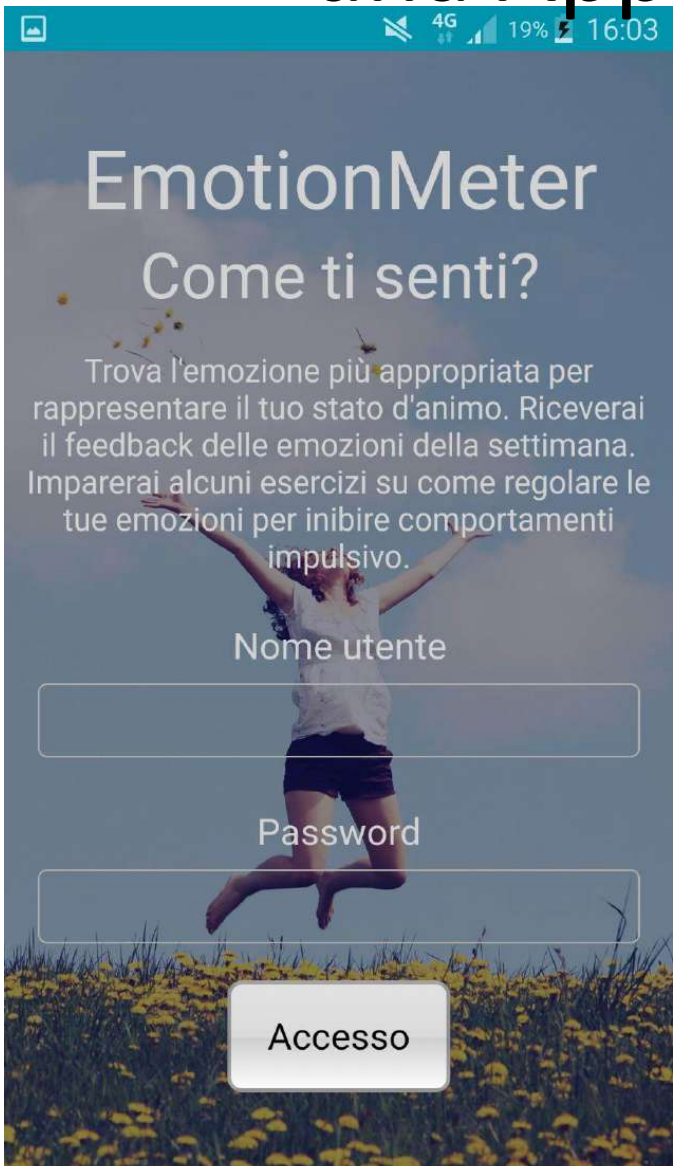
Reinforce Inner Strength Effectively to combat bullying

Civiform

Co-funded by the Rights, Equality and Citizenship (REC) Programme of the European Union

RISE

Imparare a regolare le emozioni con una App per smartphone



Progetto biennaleSISSA – Regione FVG 2017-2019

REGIONE AUTONOMA FRIULI VENEZIA GIULIA
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comune di trieste

ITALIA CONI COMITATO REGIONALE FRIULI VENEZIA GIULIA

Sport Emozioni e Cervello

2015-2017

General strategy

building the life-skills and inner-strength:

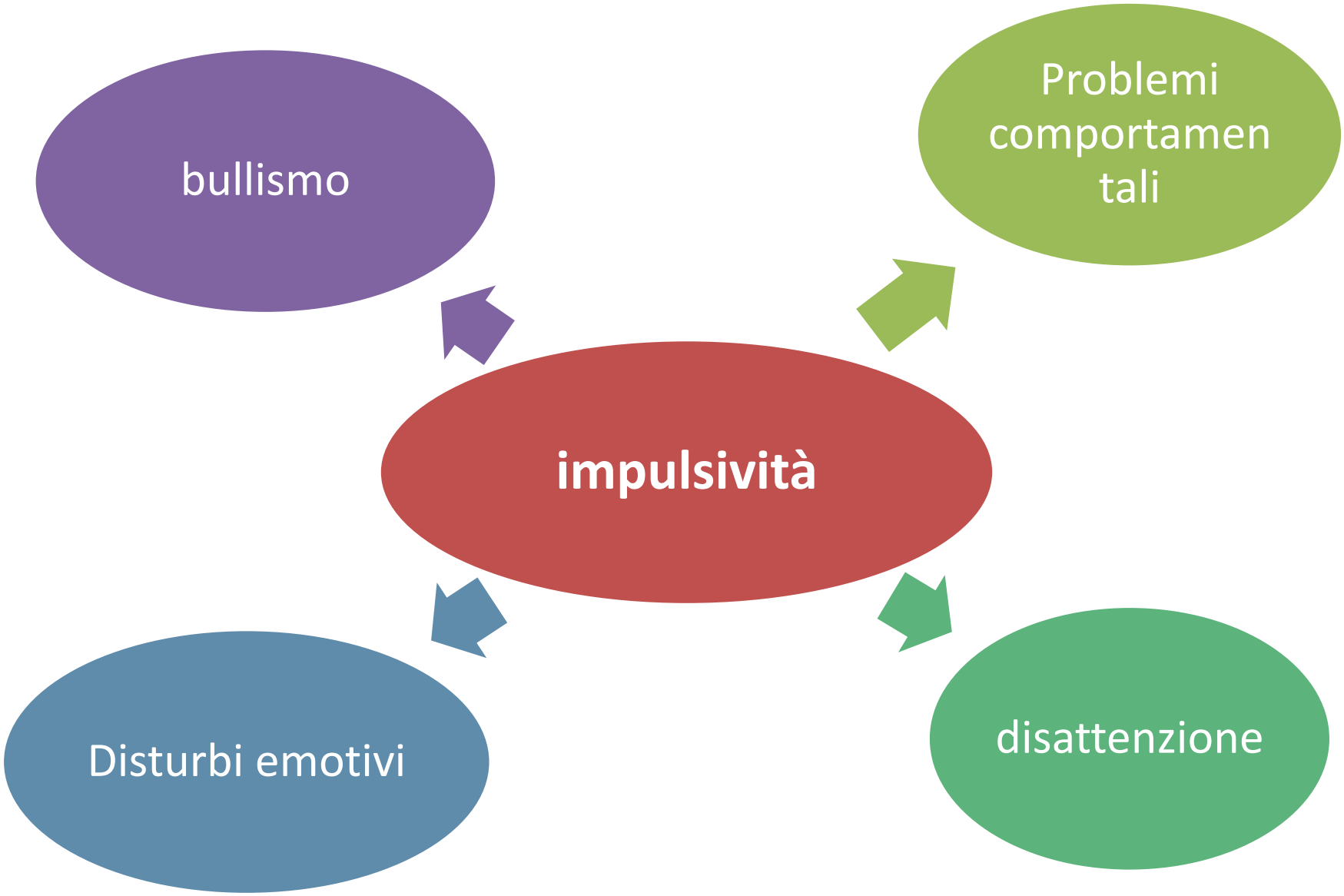
- Strengthening the executive functions (particularly he ability to regulate emotions)
- Teaching self-control
- to promote emotional well-being and teach adaptive coping skills among teens.

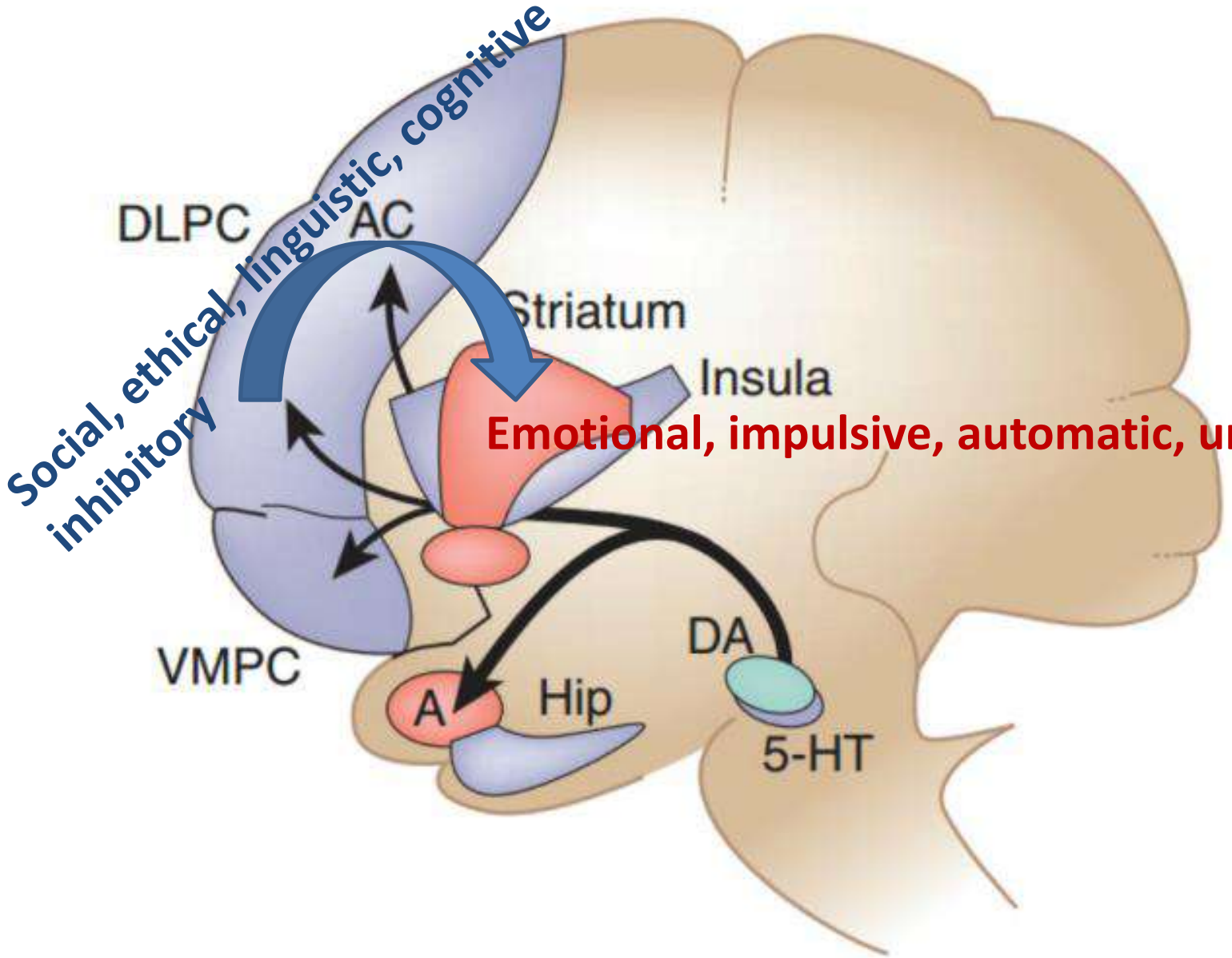
General strategy: the means

- Brain-based teachings
- Neuroplasticity-based activities
- To increase the knowledge of the mechanisms of the brain and mind
- Teaching of mindfulness tecniques
- Sports and physical exercise

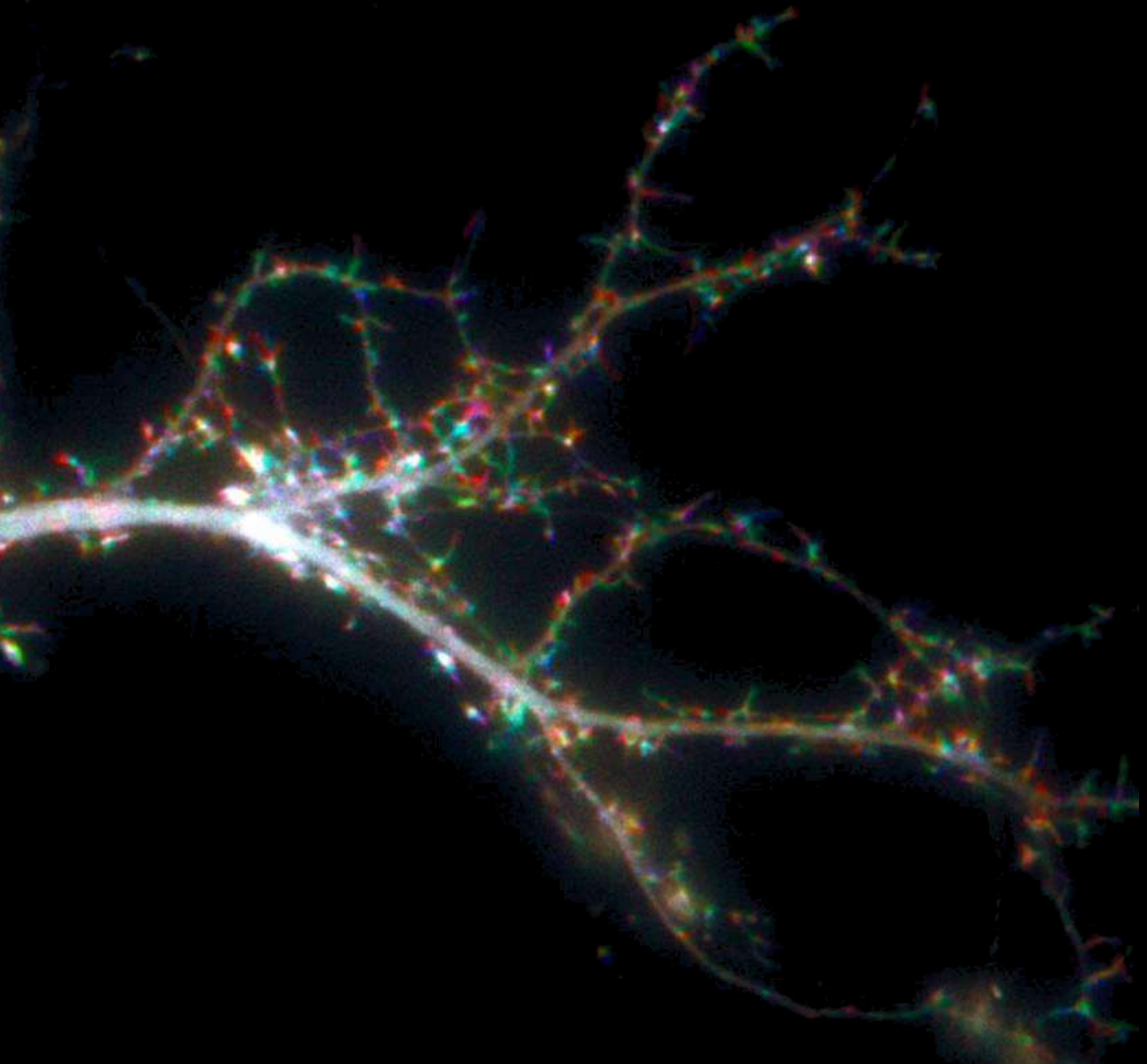
SELF-CONTROL

THE VOLUNTARY CONTROL OF BEHAVIOUR


bullismo
Problemi comportamentali
impulsività
Disturbi emotivi
disattenzione


Social, ethical, linguistic, cognitive
inhibitory
DLPC
AC
Striatum
Insula
Emotional, impulsive, automatic, unconscious
VMPC
A
Hip
DA
5-HT

Neuroplasticity

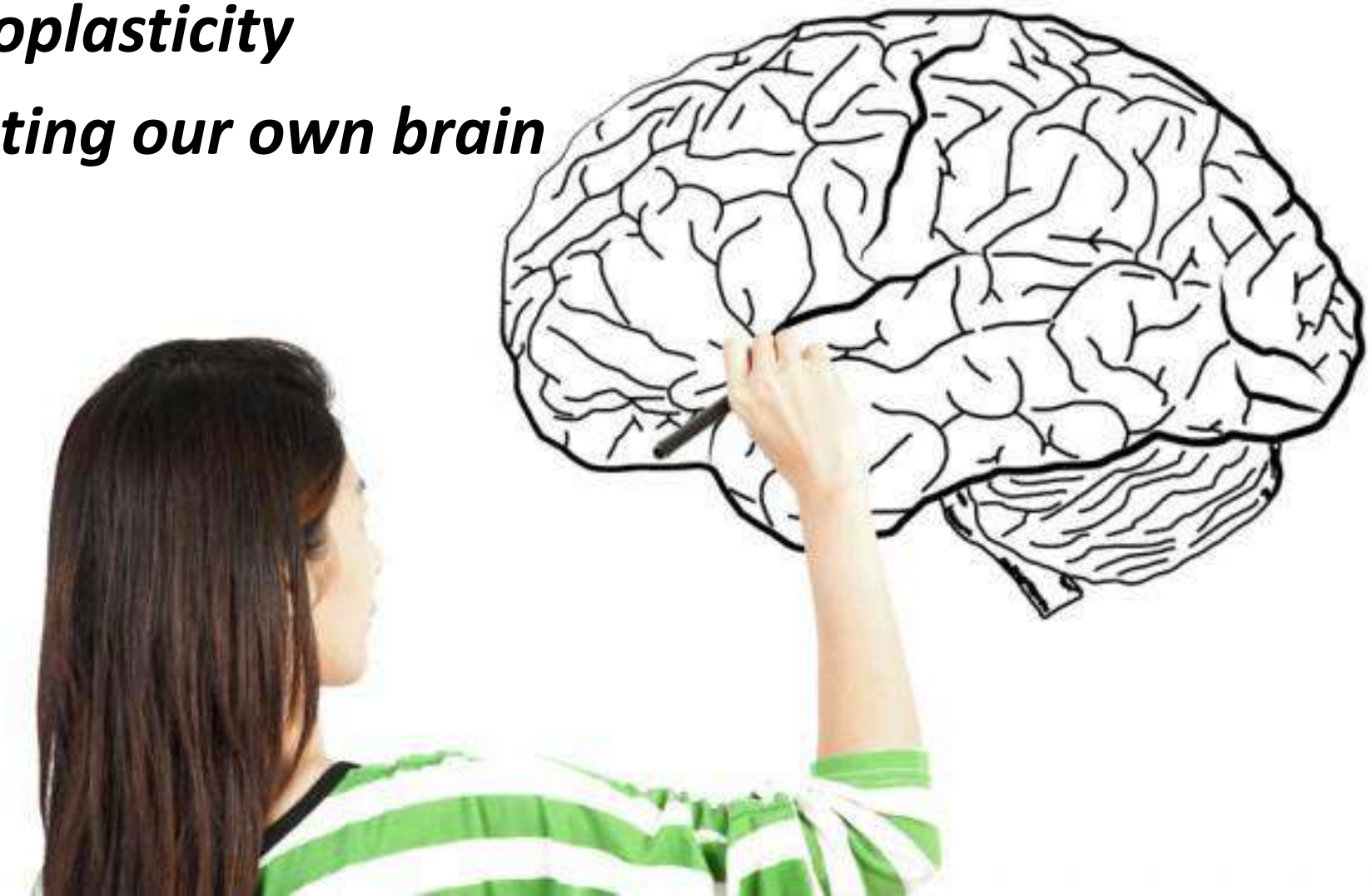


The brain is constantly building itself

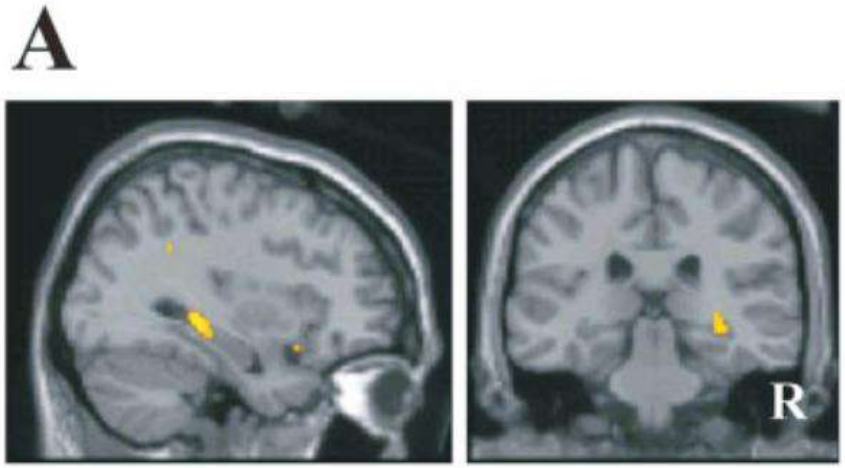
We become what we repeatedly do

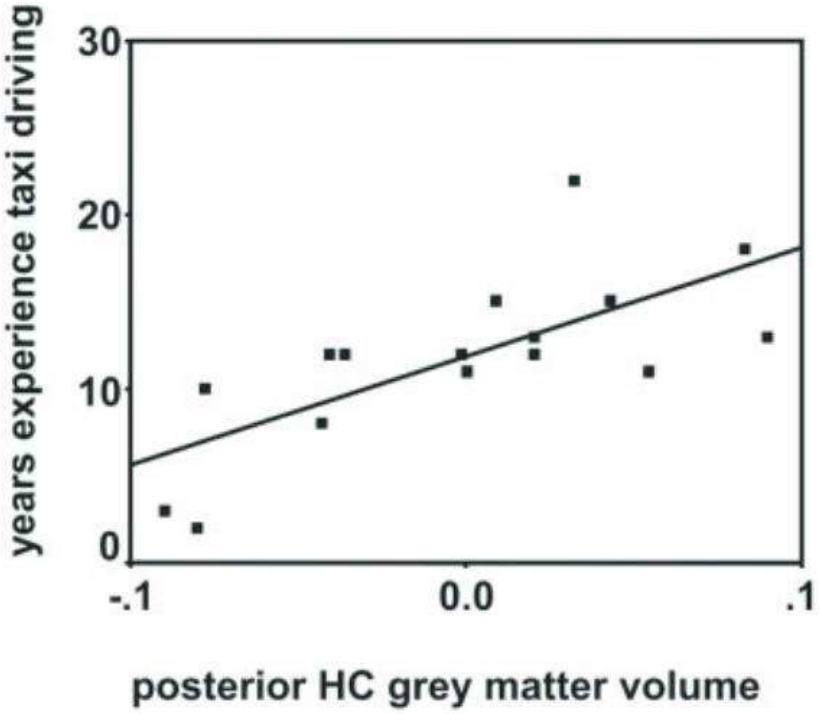
Neuroplasticity

Sculpting our own brain



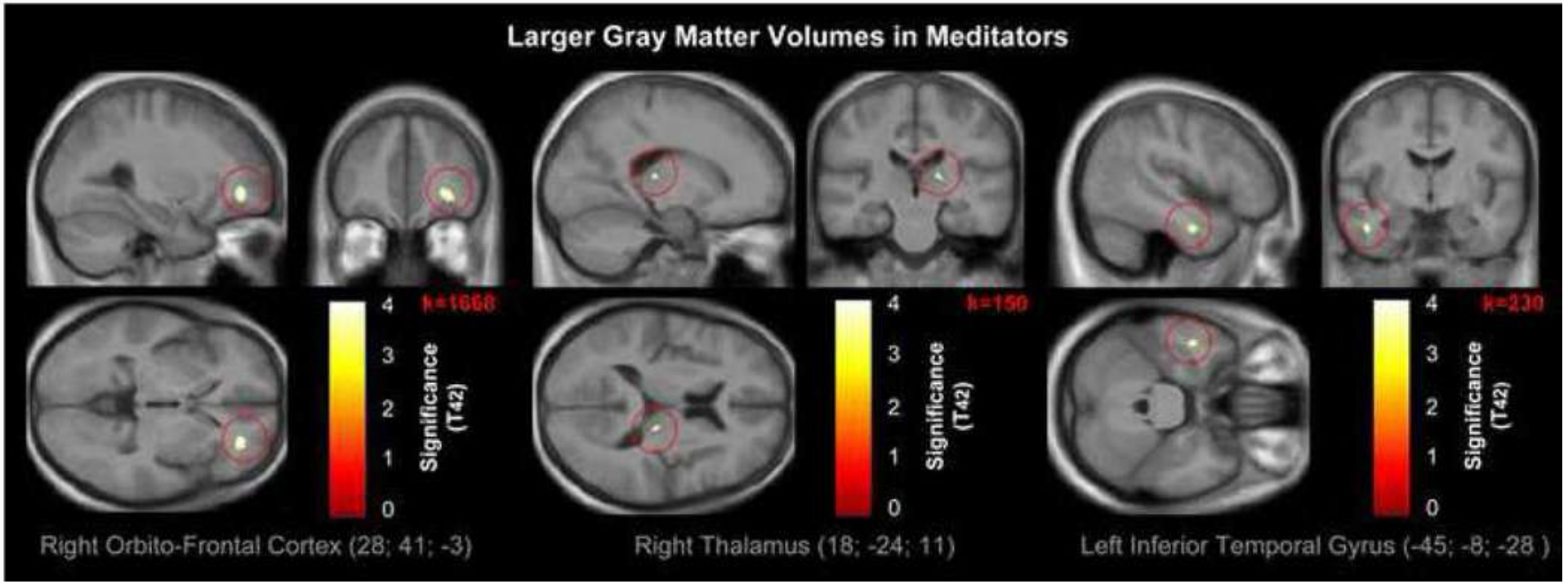
HIPPOCAMPUS OF LONDON TAXI DRIVERS

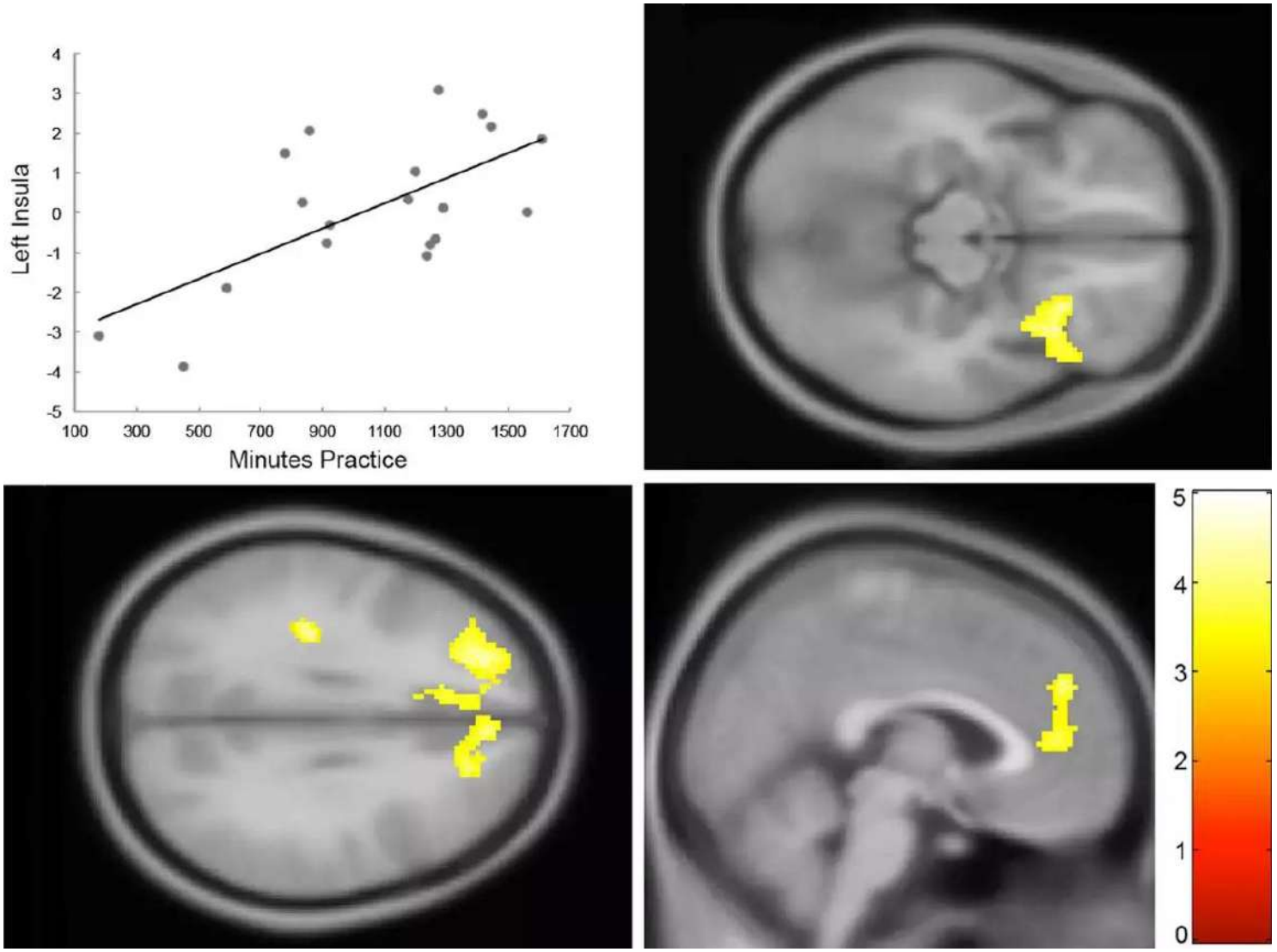




Eleanor A. Maguire, Katherine Woollett, Hugo J. Spiers, London taxi drivers and bus drivers: A structural MRI and neuropsychological analysis. *Hippocampus*, 16, 12, pp. 1091–1101, December 2006

Neuroplasticity in purely mental functions





Allen M, Dietz M, Blair KS, van Beek M, Rees G, Vestergaard-Poulsen P, Lutz A, Roepstorff A.
Cognitive-affective neural plasticity following active-controlled mindfulness intervention. *J Neurosci*. 2012 Oct 31;32(44):15601-10.

Neuroplasticity and physical exercise

- Neuroplasticity can be expanded through physical exercise
- Physical activity promotes the production and release of nerve growth factors in the brain
- This happens particularly in the regions of the brain that mediates executive functions

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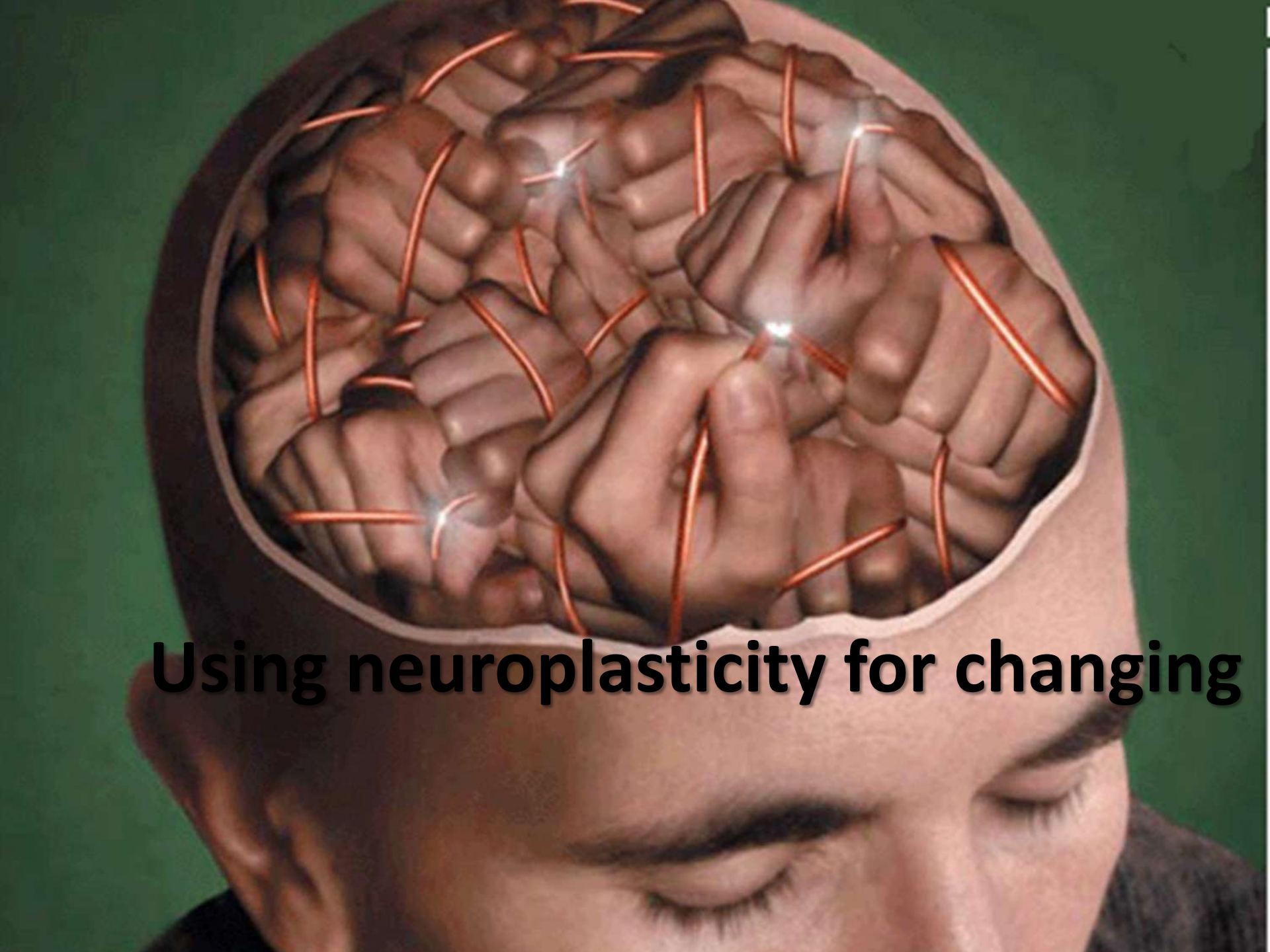
2015-2017


Using neuroplasticity for changing

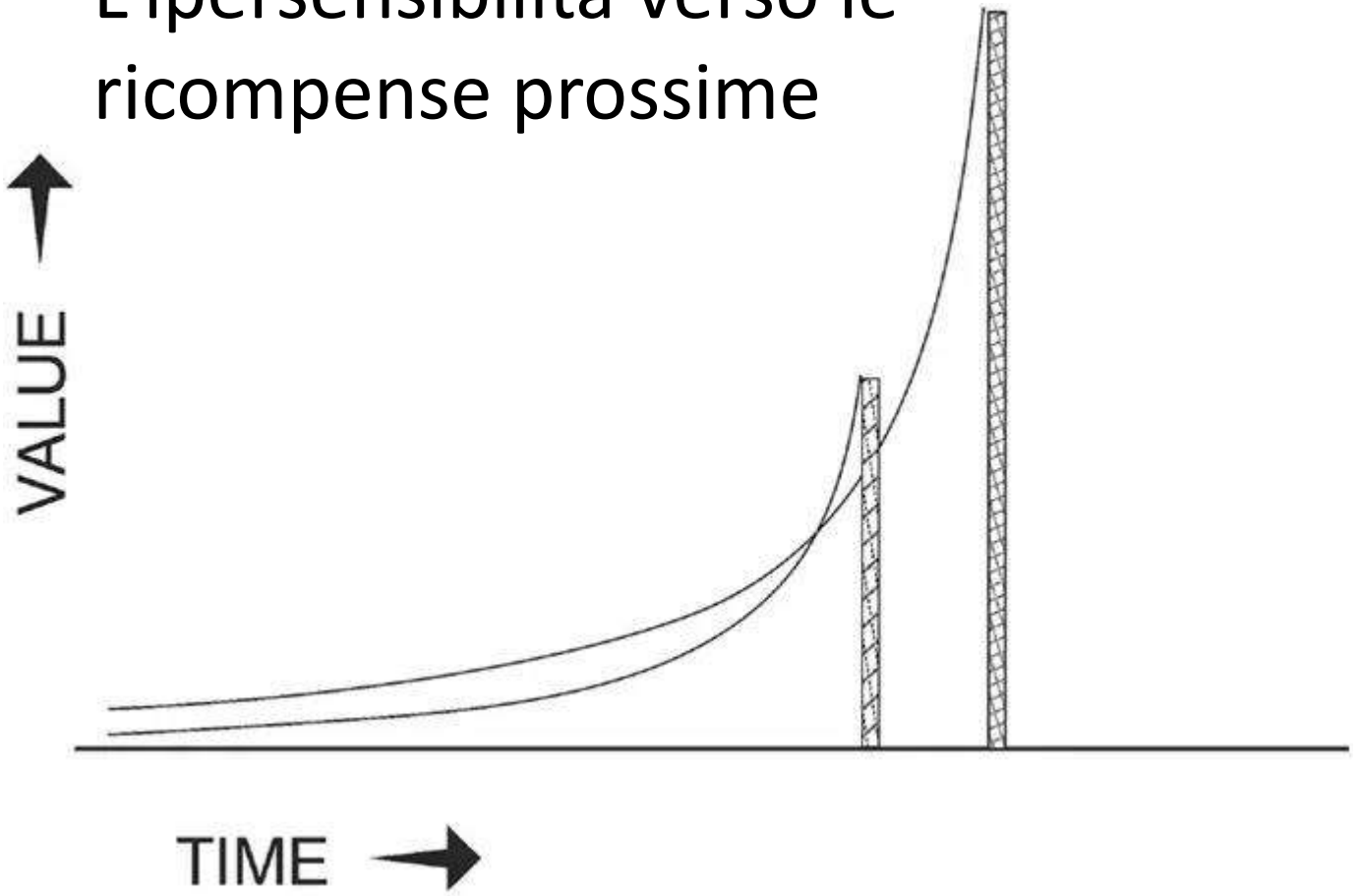
Because of **neuroplasticity**, biological determinants for impulsiveness, risk-taking and aggressive behaviour can be modulated by specific trainings

Miopia per il futuro

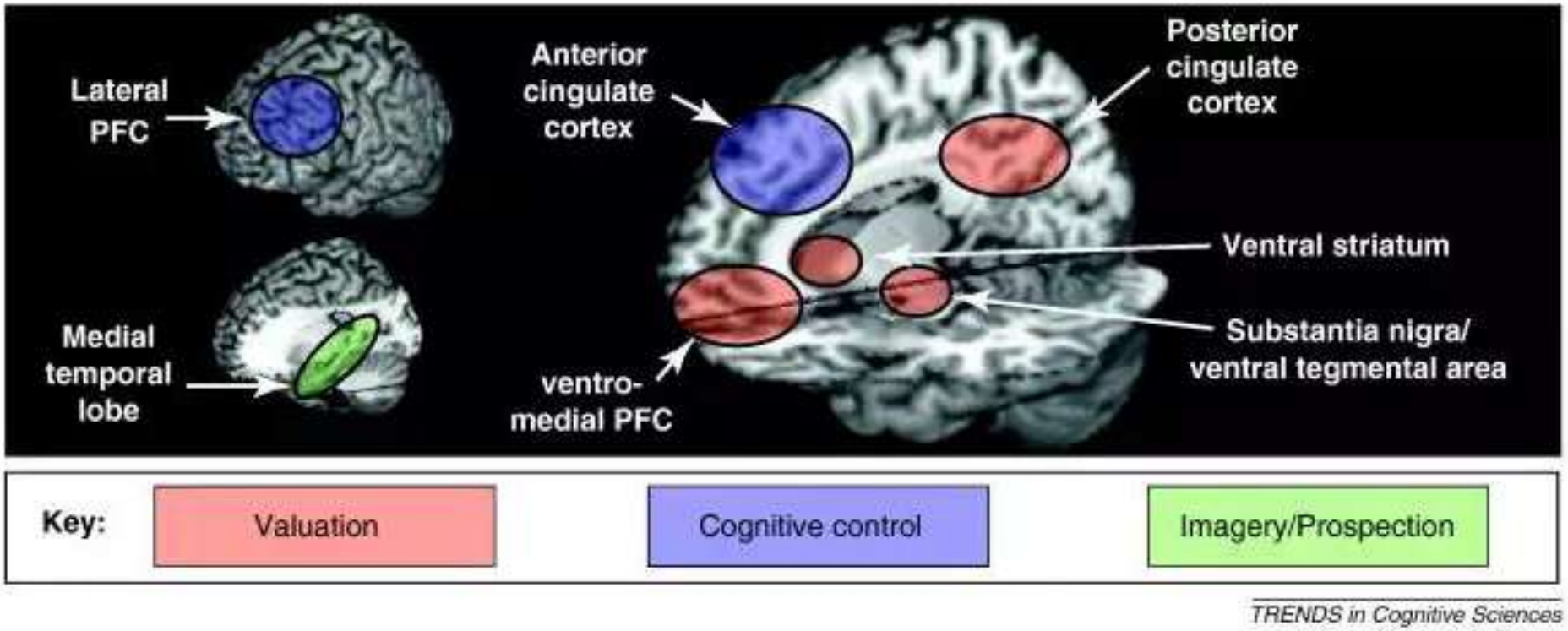
Ipersensibilità verso le ricompense presenti

Le decisioni intertemporali

- Lo sconto del futuro
- L'ipersensibilità verso le ricompense prossime



Decidere oggi per il nostro io di domani
le decisioni intertemporali



uno, due, tre o molti?

sé multipli?

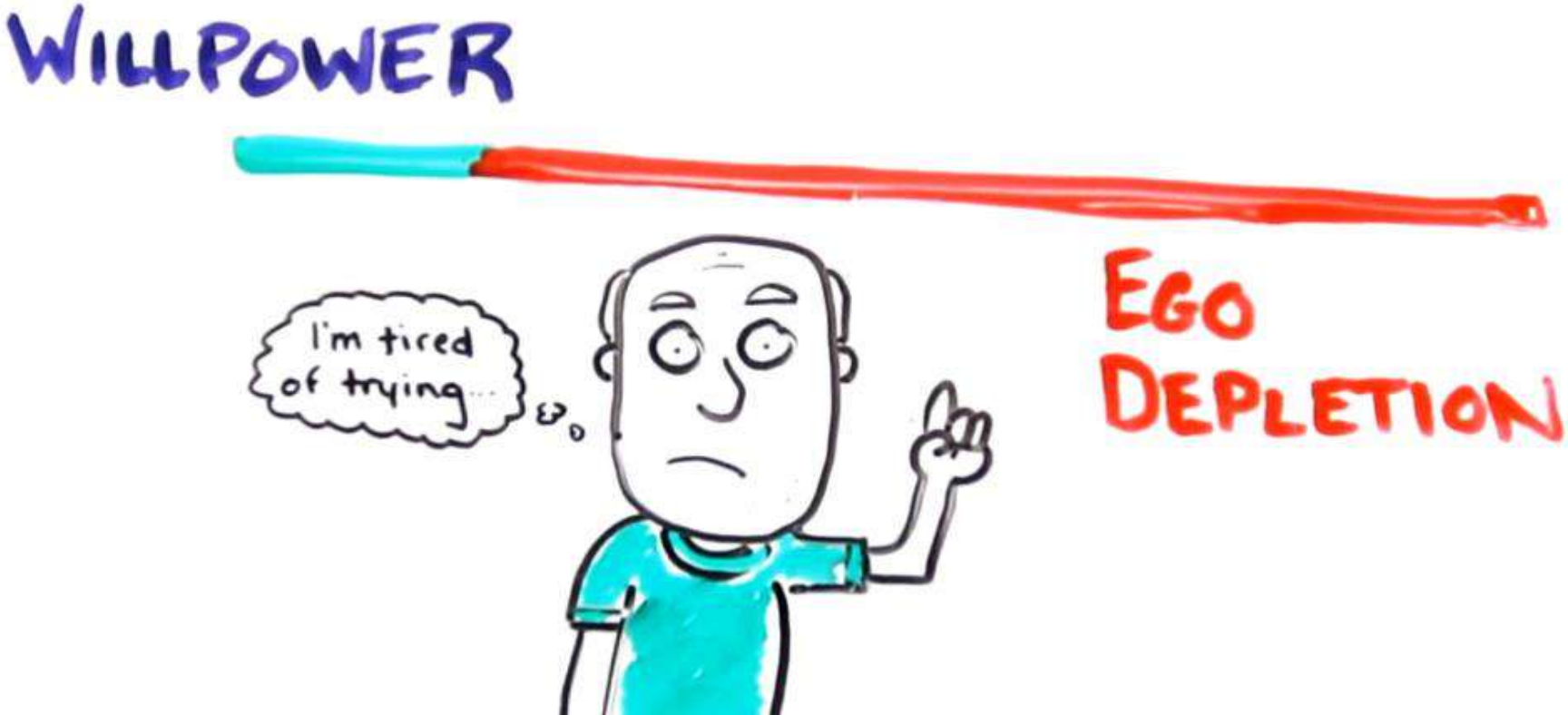
i nostri
sé futuri sembrano
altri

siamo uno per
ogni presente?

SELF CONTROL IS A LIMITED RESOURCE

Baumeister, R. F. et al. (1998). "Ego depletion: Is the active self to limited resource. Journal of Personality and Social Psychology 74 (5): 1252-1265.

Baumeister, RF. (2002). "Ego Depletion and Self-Control Failure: An Energy Model of the Self's Executive Function". Self and Identity **1** (2): 129–136.



Self-control and Ego depletion

It is drained by

- Processing perceptions
- Cognitive procesess
- Decision making
- Stress
- Regulation of emotions
- Tiredness and lack of sleep
- hunger

Ego depletion and aggressiveness

Journal of Experimental Social Psychology

Volume 43, Issue 1, January 2007, Pages 62–76

Violence restrained: Effects of self-regulation and its depletion on aggression ☆

C. Nathan DeWall, Roy F. Baumeister, Tyler F. Stillman, Matthew T. Gailliot

Training, strengthening Self-control and aggressiveness

Training Self-control and aggressiveness

Journal of Research in Personality 45 (2011) 252–256

Contents lists available at ScienceDirect

Journal of Research in Personality

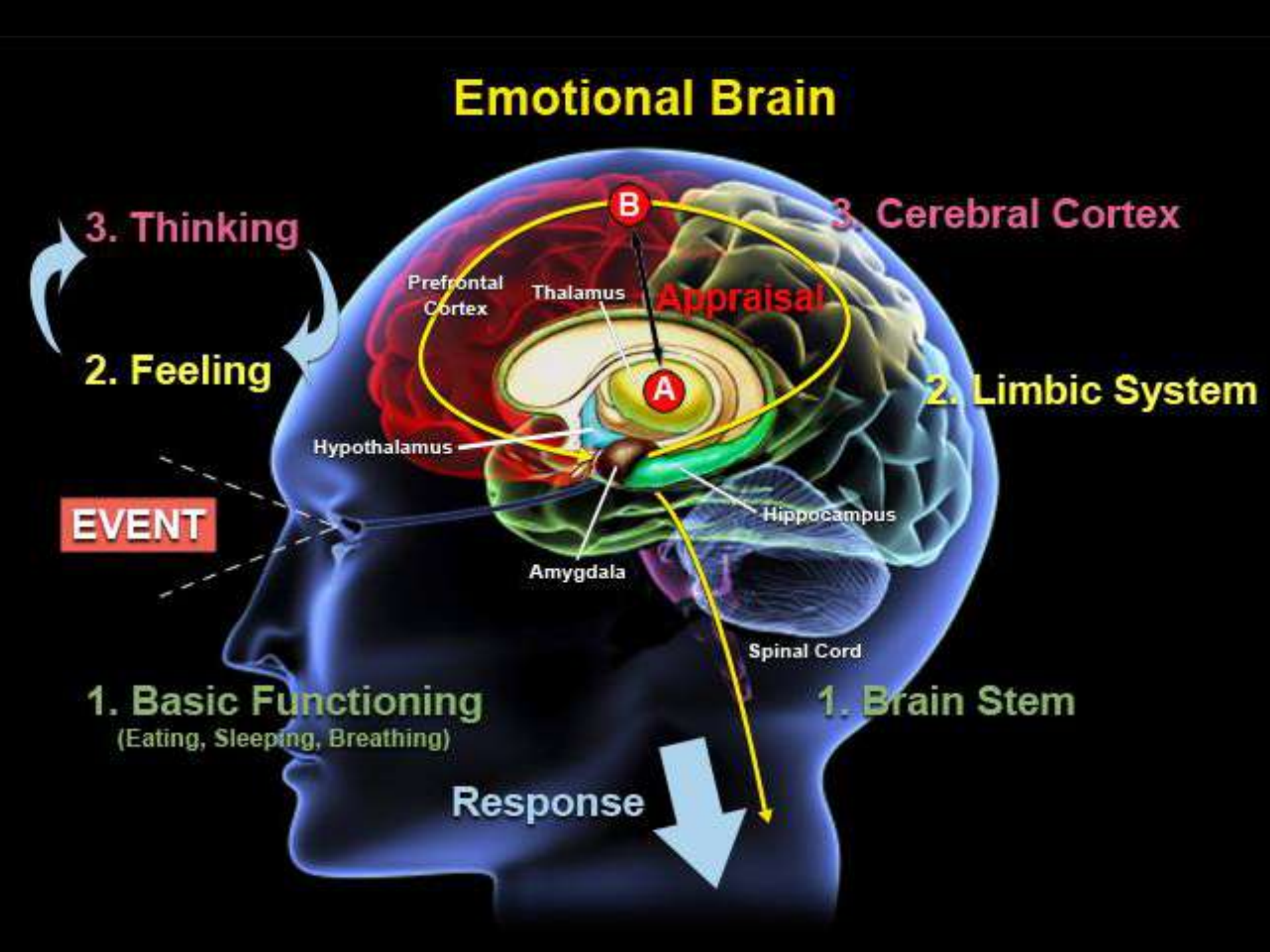
journal homepage: www.elsevier.com/locate/jrp

Brief Report

Self-control training decreases aggression in response to provocation in aggressive individuals

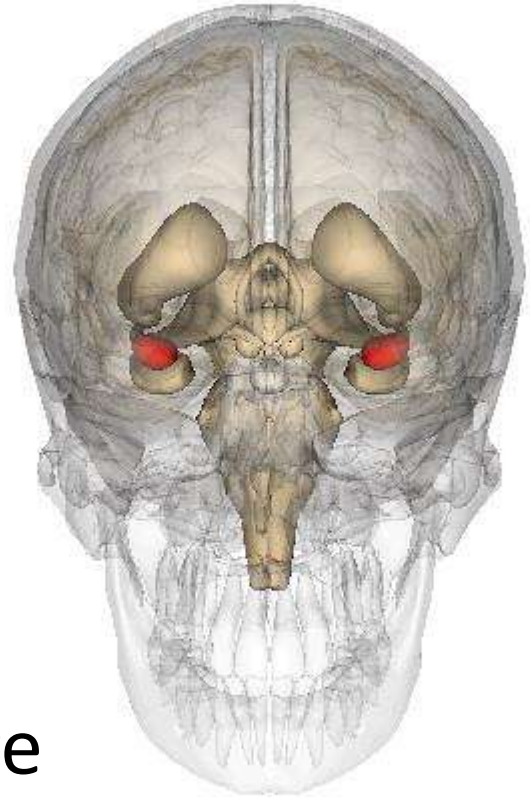
Thomas F. Denson [a,*], Miriam M. Capper [a], Megan Oaten [b], Malte Friese [c], Timothy P. Schofield [a]

[a] School of Psychology, University of New South Wales, Sydney, Australia
[b] Department of Psychology, Macquarie University, Sydney, Australia
[c] Department of Psychology, University of Basel, Basel, Switzerland


Emotional Brain
3. Thinking
2. Feeling
EVENT
1. Basic Functioning
(Eating, Sleeping, Breathing)
B
A
Prefrontal Cortex
Thalamus
Appraisal
3. Cerebral Cortex
2. Limbic System
Hypothalamus
Hippocampus
Amygdala
Spinal Cord
1. Brain Stem
Response

The Amygdala

- The main centre of emotional brain
- Highly activated during fear and anger
- Age differences, more active in youngsters
- Gender differences, more active in male



Putting feelings into words

“What, man! Ne'er pull your hat upon your brows.
Give sorrow words. The grief that does not speak
Whispers the o'erfraught heart and bids it break”

Shakespeare, *Macbeth*, Act 4 Scene 3

Putting feelings into words

- naming the emotion perceived while observing various emotional expressions, the activation of the amygdala decreased compared to when the same photos were simply observed.
- This is particularly evident for anger

Putting Feelings Into Words : Affect Labeling Disrupts Amygdala Activity in Response to Affective Stimuli

Matthew D. Lieberman, Naomi I. Eisenberger, Molly J. Crockett, Sabrina M. Tom, Jennifer H. Pfeifer and Baldwin M. Way

Psychological Science 2007 18: 421

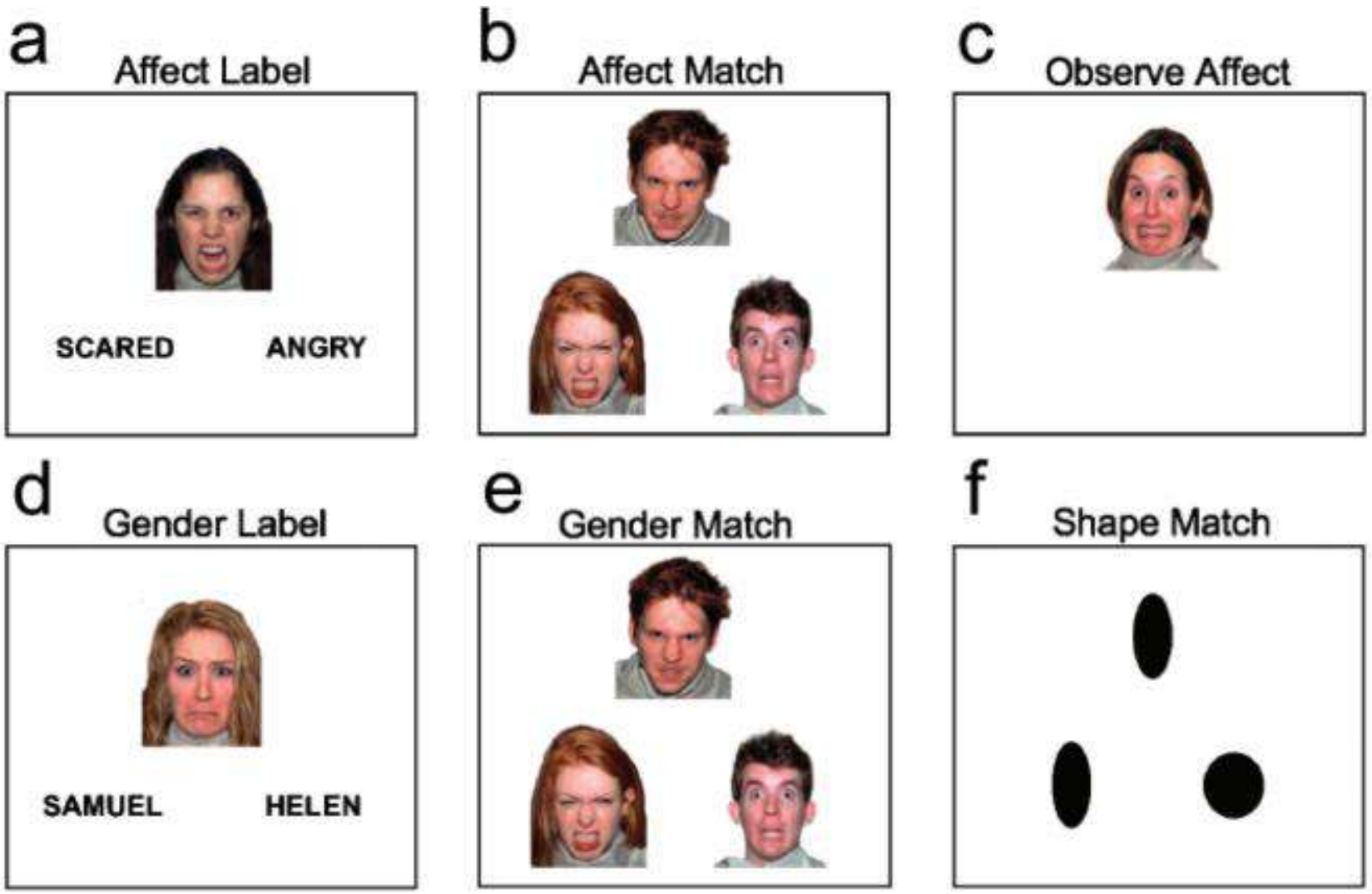
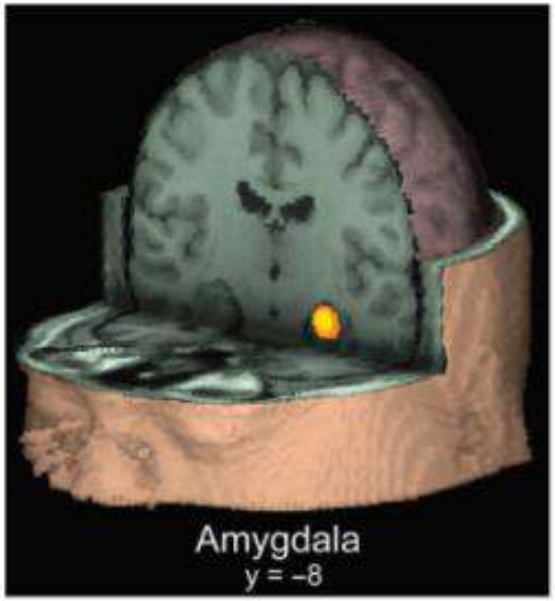


Fig. 1. A sample display from each of the six types of experimental trials.



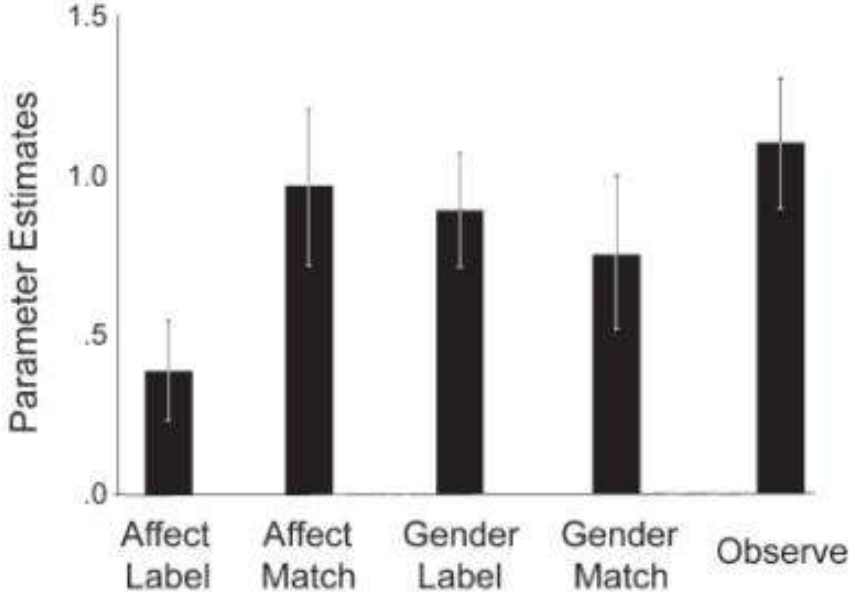
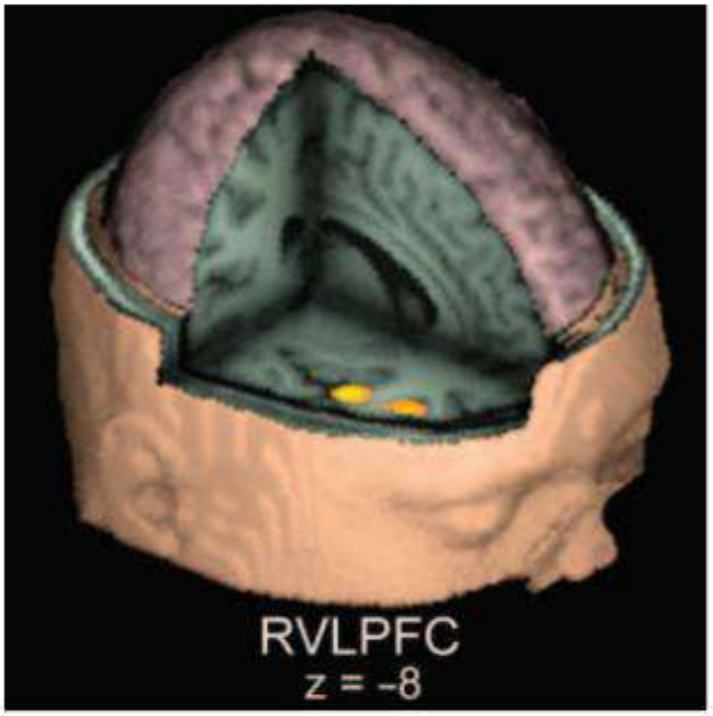


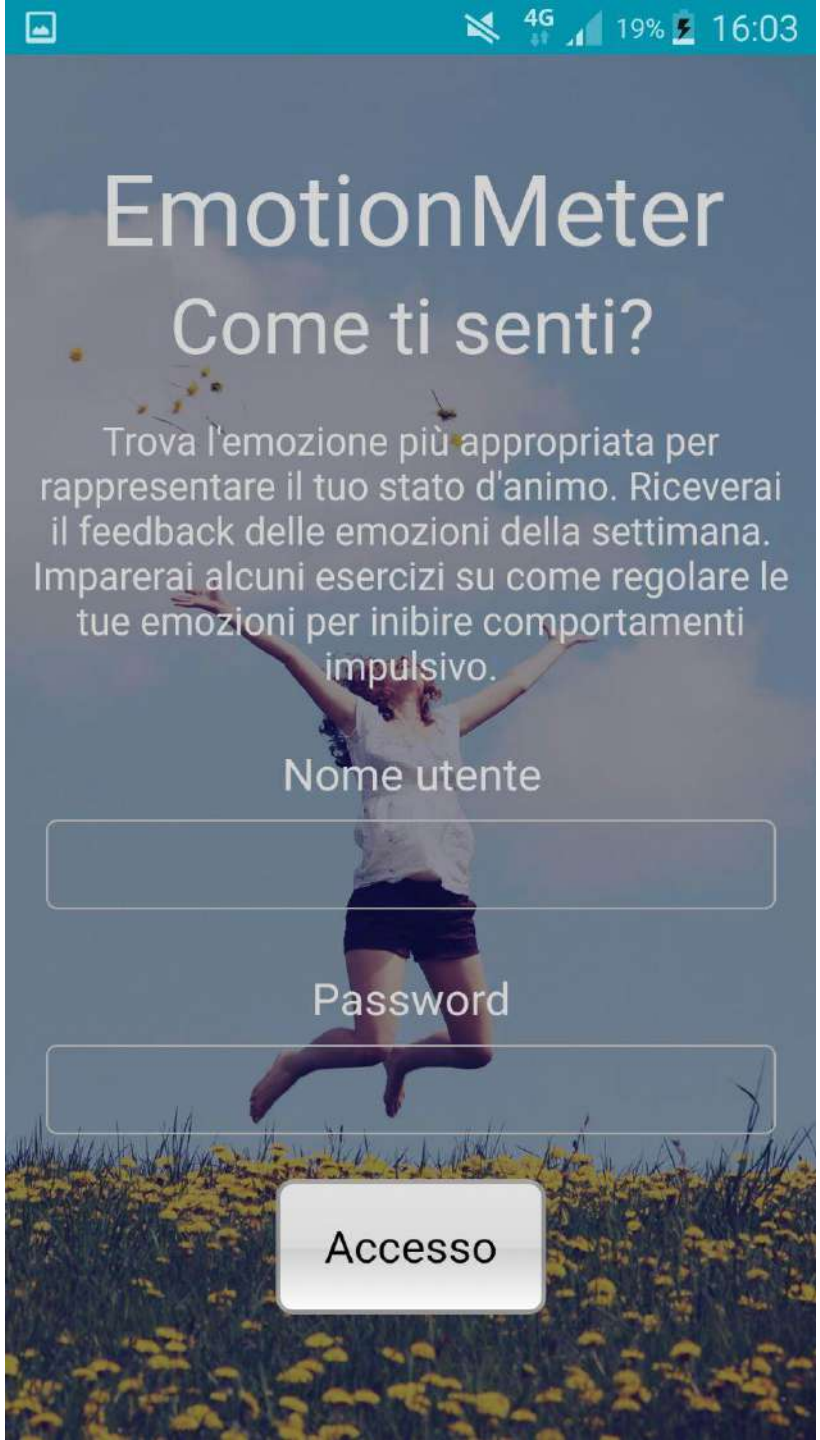
Fig. 2. Parameter estimates of activity during five conditions (relative to activity in the shape-n an amygdala region of interest (ROI). The ROI was identified by comparing activity in the obse in the shape-match condition. The illustration on the left shows an axial slice indicating the ex



Working with the Emotional lexicon

- A self-assessment of mood states improves mood
- Lexicon of affective states

Tense	Grouchy	Proud	Muddled	Hesitant
Angry	Blue	Fatigued	Cheerful	Bad-tempered
Worn Out	Energetic	Accepted	Inadequate	Worthless
Unhappy	Isolated	Skeptical	Bitter	Forgetful
Confident	Panicky	Helpful	Loving	Carefree
Lively	Hopeless	Annoyed	Exhausted	Embarrassed
Confused	Jealous	Suspicious	Anxious	Terrified
Amazed	Relaxed	Amused	Gloomy	Guilty
Disillusioned	Resentful	Discouraged	Desperate	Vigorous
Sorry for things done	Grateful	Resentful	Sluggish	Threatened
Listless	Unworthy	Empathetic	Rebellious	Bushed
Peeved	Perplexed	Vulnerable	Helpless	Exuberant
Disappointed	Spiteful	Nervous	Weary	Recalcitrant
Sad	Rejected	Ashamed	Alert	Selfish
Active	Sympathetic	Lonely	Deceived	Determinate
Humiliated	Uneasy	Kind	Furious	Exalted
Compassionate	Restless	Miserable	Disgusted	Purposeless
On edge	Remorseful	Coragueous	Trusting	Enthusiastic



Smartphone App

Terrore

Mi sento così quando: quando provo un sentimento o mi trovo in uno stato di forte paura o di vivo sgomento

Ansia

Mi sento così quando: quando provo uno stato di agitazione, di forte apprensione dovuto a timore, incertezza nell'attesa di qualcosa

Paura

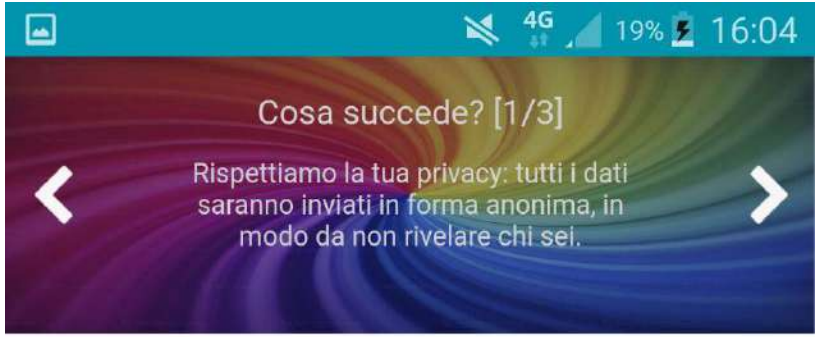
Mi sento così quando: penso che possa capitarmi qualcosa di male

Insicurezza

Mi sento insicuro quando la mancanza di punti di riferimento produce tensione o disagio di fronte ad un pericolo reale o immaginario o dinanzi a qualcosa che temo possa succedere

Preoccupazione

mi sento così quando: sono in uno stato di incertezza, apprensione per qualcosa che ho paura potrebbe accadere in futuro.



Dove ti trovi?

- [ ] A casa
- [ ] Nel convitto
- [ ] Con i miei amici
- [ ] A scuola
- [ ] In giro per la città
- [ ] Da qualche altra parte

Con chi sei?

- [ ] Con gli amici
- [ ] Con i miei compagni di classe
- [ ] Da solo
- [ ] Con la mia famiglia
- [ ] Con qualcun altro

Dove senti l'emozione nel tuo corpo?

- [x] Testa
- [ ] Gambe
- [ ] Voce
- [ ] Pancia
- [ ] Collo
- [ ] Mani
- [ ] Cuore
- [ ] Gola
- [ ] Pelle
- [ ] Spalle
- [ ] Piedi
- [ ] Altrove

Com'è il tuo respiro?

- [ ] Mi sembra di non poter respirare
- [ ] Il mio respiro è corto
- [ ] Sono senza fiato
- [ ] Respiro regolarmente
- [ ] Qualcos'altro

Se dovessi fare una di queste attività, quale preferiresti?

- [ ] Correre
- [ ] Preferisco stare da solo
- [ ] Chiamo un amico
- [ ] Mangiare
- [ ] Riposare
- [ ] Uscire all'aperto
- [ ] Parlare con qualcuno che ne sa più di me
- [ ] Non fare niente
- [ ] Qualcos'altro

Lo strumento: la app

La app: stato emotivo prevalente

La app: Profile Of Mood State (POMS)

La app: contestualizzazione

Emozioni in regola

Progetto di ricerca/azione
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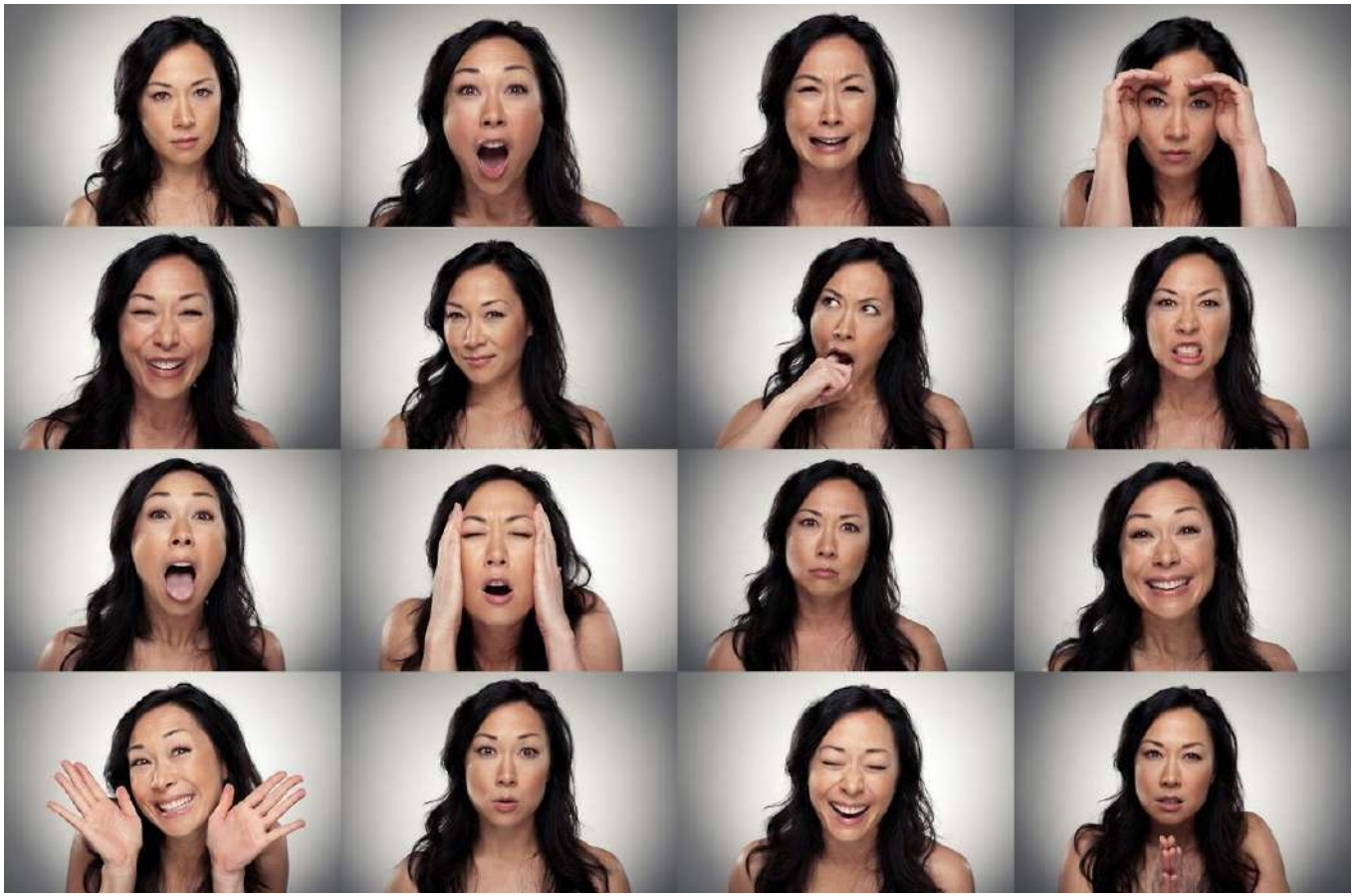

The intervention programme

- 10 different sessions of activities
- Each session includes, some brain-based teachings, contemplative practice (mindfulness)

MEDITATION AND MINDFULNESS

The root of Self-control is Self-awareness

A Wandering Mind Is an Unhappy Mind

Matthew A. Killingsworth* and Daniel T. Gilbert

Unlike other animals, human beings spend a lot of time thinking about what is not going on around them, contemplating events that happened in the past, might happen

more of 22 activities adapted from the day reconstruction method (*10*, *11*), and a mind-wandering question ("Are you thinking about something other than what you're currently doing?") answered

including the least enjoyable. Although people's minds were more likely to wander to pleasant topics (42.5% of samples) than to unpleasant topics (26.5% of samples) or neutral topics (31% of samples), people were no happier when thinking about pleasant topics than about their current activity (b = –0.52, not significant) and were considerably unhappier when thinking about neutral topics (b = –7.2, $P < 0.001$) or unpleasant topics (b = –23.9, $P < 0.001$) than about their current activity (Fig. 1, bottom). Although negative moods are known

A Wandering Mind Is an Unhappy Mind

Matthew A. Killingsworth* and Daniel T. Gilbert

Unlike other animals, human beings spend a lot of time thinking about what is not going on around them, contemplating events that happened in the past, might happen in the future, or will never happen at all. Indeed, "stimulus-independent thought" or "mind wandering" appears to be the brain's default mode of operation (*1*–*3*). Although this ability is a remarkable evolutionary achievement that allows people to learn, reason, and plan, it may have an emotional cost. Many philosophical and religious traditions teach that happiness is to be found by living in the moment, and practitioners are trained to resist mind wandering and "to be here now." These traditions suggest that a wandering mind is an unhappy mind. Are they right?

Laboratory experiments have revealed a great deal about the cognitive and neural bases of mind wandering (*3*–*7*), but little about its emotional consequences in everyday life. The most reliable method for investigating real-world emotion is experience sampling, which involves contacting people as they engage in their everyday activities and asking them to report their thoughts, feelings, and actions at that moment. Unfortunately, collecting real-time reports from large numbers of people as they go about their daily lives is so cumbersome and expensive that experience sampling has rarely been used to investigate the relationship between mind wandering and happiness and has always been limited to very small samples (*8*, *9*).

We solved this problem by developing a Web application for the iPhone (Apple Incorporated, Cupertino, California), which we used to create an unusually large database of real-time reports of thoughts, feelings, and actions of a broad range of people as they went about their daily activities. The application contacts participants through their iPhones at random moments during their waking hours, presents them with questions, and records their answers to a database at www.trackyourhappiness.org. The database currently contains nearly a quarter of a million samples from about 5000 people from 83 different countries who range in age from 18 to 88 and who collectively represent every one of 86 major occupational categories.

To find out how often people's minds wander, what topics they wander to, and how those wanderings affect their happiness, we analyzed samples from 2250 adults (58.8% male, 73.9% residing in the United States, mean age of 34 years) who were randomly assigned to answer a happiness question ("How are you feeling right now?") answered on a continuous sliding scale from very bad (0) to very good (100), an activity question ("What are you doing right now?") answered by endorsing one or more of 22 activities adapted from the day reconstruction method (*10*, *11*), and a mind-wandering question ("Are you thinking about something other than what you're currently doing?") answered with one of four options: no; yes, something pleasant; yes, something neutral; or yes, something unpleasant. Our analyses revealed three facts.

First, people's minds wandered frequently, regardless of what they were doing. Mind wandering occurred in 46.9% of the samples and in at least 30% of the samples taken during every activity except making love. The frequency of mind wandering in our real-world sample was considerably higher than is typically seen in laboratory experiments. Surprisingly, the nature of people's activities had only a modest impact on whether their minds wandered and had almost no impact on the pleasantness of the topics to which their minds wandered (*12*).

Second, multilevel regression revealed that people were less happy when their minds were wandering than when they were not [slope (b) = –8.79, $P < 0.001$], and this was true during all activities, including the least enjoyable. Although people's minds were more likely to wander to pleasant topics (42.5% of samples) than to unpleasant topics (26.5% of samples) or neutral topics (31% of samples), people were no happier when thinking about pleasant topics than about their current activity (b = –0.52, not significant) and were considerably unhappier when thinking about neutral topics (b = –7.2, $P < 0.001$) or unpleasant topics (b = –23.9, $P < 0.001$) than about their current activity (Fig. 1, bottom). Although negative moods are known to cause mind wandering (*13*), time-lag analyses strongly suggested that mind wandering in our sample was generally the cause, and not merely the consequence, of unhappiness (*12*).

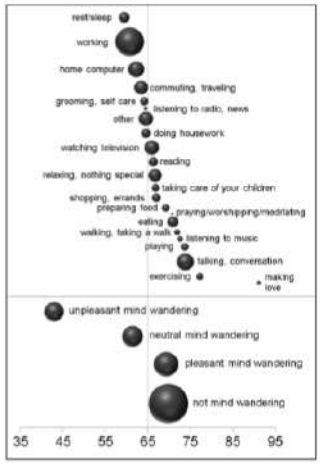

Fig. 1. Mean happiness reported during each activity **(top)** and while mind wandering to unpleasant topics, neutral topics, pleasant topics or not mind wandering **(bottom)**. Dashed line indicates mean of happiness across all samples. Bubble area indicates the frequency of occurrence. The largest bubble ("not mind wandering") corresponds to 53.1% of the samples, and the smallest bubble ("praying/worshipping/meditating") corresponds to 0.1% of the samples.

Third, what people were thinking was a better predictor of their happiness than was what they were doing. The nature of people's activities explained 4.6% of the within-person variance in happiness and 3.2% of the between-person variance in happiness, but mind wandering explained 10.8% of within-person variance in happiness and 17.7% of between-person variance in happiness. The variance explained by mind wandering was largely independent of the variance explained by the nature of activities, suggesting that the two were independent influences on happiness.

In conclusion, a human mind is a wandering mind, and a wandering mind is an unhappy mind. The ability to think about what is not happening is a cognitive achievement that comes at an emotional cost.

References and Notes

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12. Materials and methods are available as supporting material on *Science* Online.
13. J. Smallwood, A. Fitzgerald, L. K. Miles, L. H. Phillips, *Emotion* **9**, 271 (2009).
14. We thank V. Pitiyanuvath for engineering www.trackyourhappiness.org and R. Hackman, A. Jenkins, W. Mendes, A. Oswald, and T. Wilson for helpful comments.

Supporting Online Material
www.sciencemag.org/cgi/content/full/330/6006/932/DC1
Materials and Methods
Table S1
References

18 May 2010; accepted 29 September 2010
10.1126/science.1192439

Harvard University, Cambridge, MA 02138, USA.
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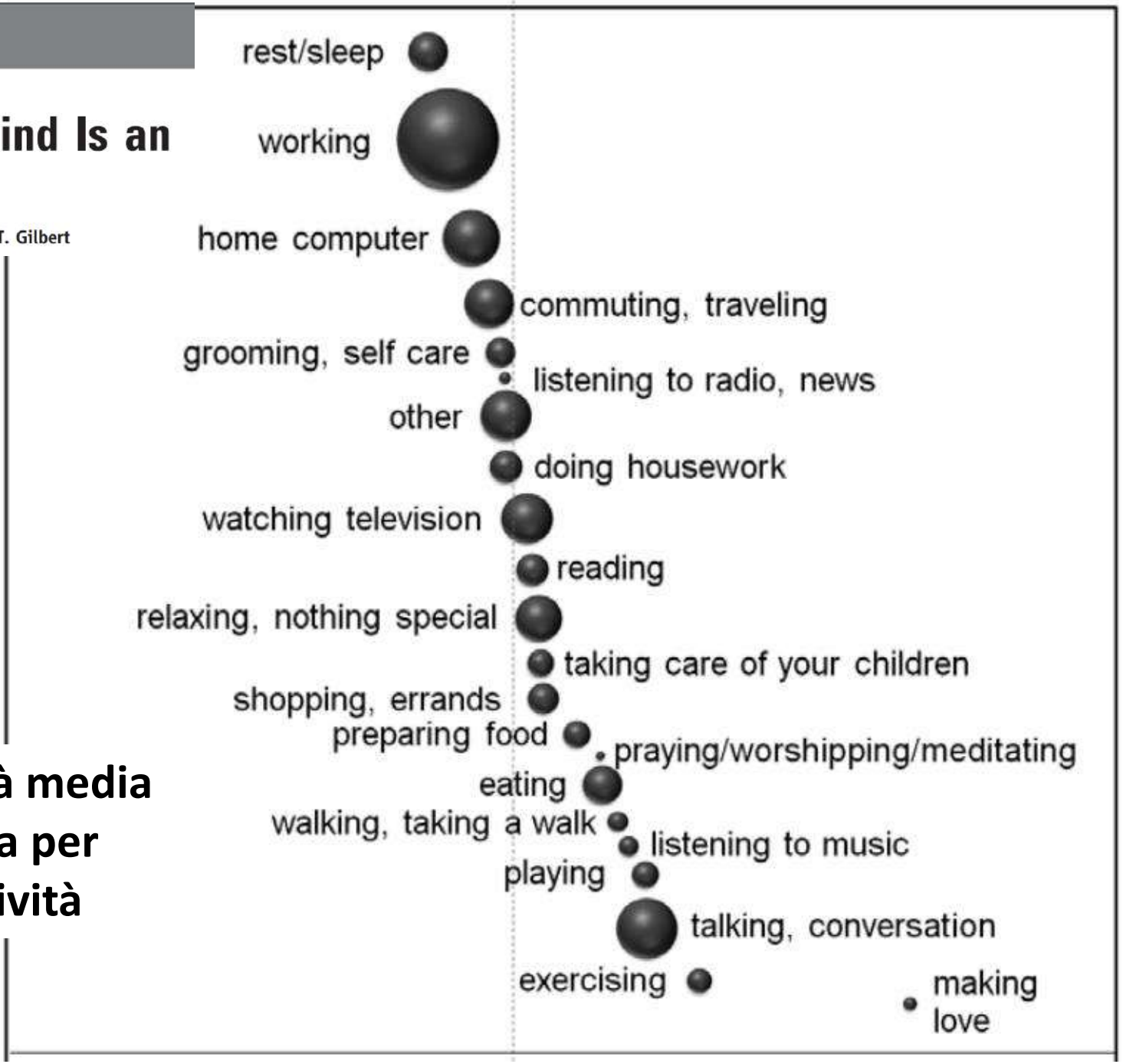
A wandering mind is an unhappy mind

A Wandering Mind Is an Unhappy Mind

Matthew A. Killingsworth* and Daniel T. Gilbert



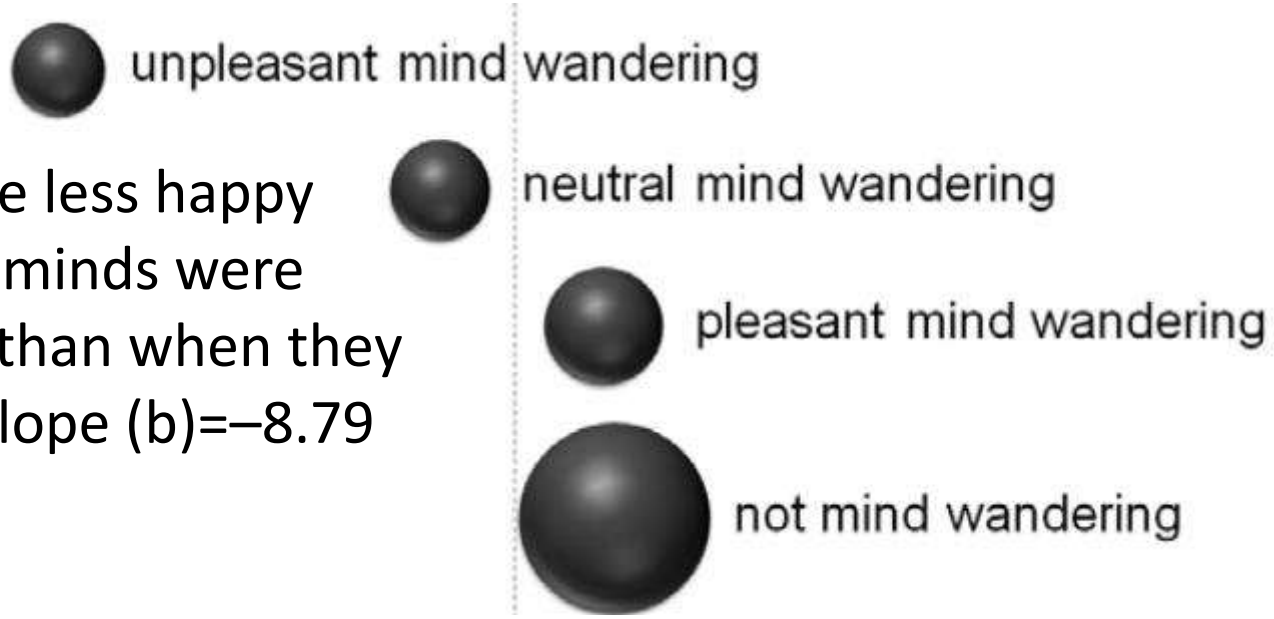
Infelicità media riportata per ogni attività

BREVIA

A Wandering Mind Is an Unhappy Mind

Matthew A. Killingsworth* and Daniel T. Gilbert

Mind wandering occurred in 46.9%



people were less happy when their minds were wandering than when they were not [slope (b)=–8.79

people were no happier when thinking about pleasant topics than about their current activity (**b=–0.52**, not significant) and were considerably unhappier when thinking about neutral topics (b=–7.2,P< 0.001) or unpleasant topics (**b=–23.9**, P< 0.001) than about their current activity

Many types of meditation

- Mindfulness
- Metta – loving kindness
- Analytic meditation
- Compassion meditation
- Standing and walking meditation
- Purifying meditation

A common trait: training attention and awareness, non judgemental observation of mental contents and processes

Promoting the ability to control behaviour, emotions and impulsiveness

Mindfulness

- From the Pali term (the Indian language of the first Buddhist writings) “sati”: awareness, attention, memory.

1) “self-regulation of attention” (maintained on the immediate experience);

2)“attitudinal orientation” (curiosity, openness, acceptance);

3)“Intention: constantly "remembered" voluntary control"

Mindfulness

- Mental training that develops metacognition and awareness,
- Metacognition is the observation of mental dynamics and contents from a detached perspective.
- This is the precondition for controlling mental processes and particularly the emotions and impulsiveness.
- **Mindfulness is a training exercise in the ability to respond to stimuli in a reflective way rather than by reflex.**

Social Cognitive and Affective Neuroscience

Mindful attention reduces neural and self-reported cue-induced craving in smokers

Cecilia Westbrook[1], John David Creswell[2], Golnaz Tabibnia[2], Erica Julson[2], Hedy Kober[3] and Hilary A. Tindle[4]

« Previo
Tab

This Artic

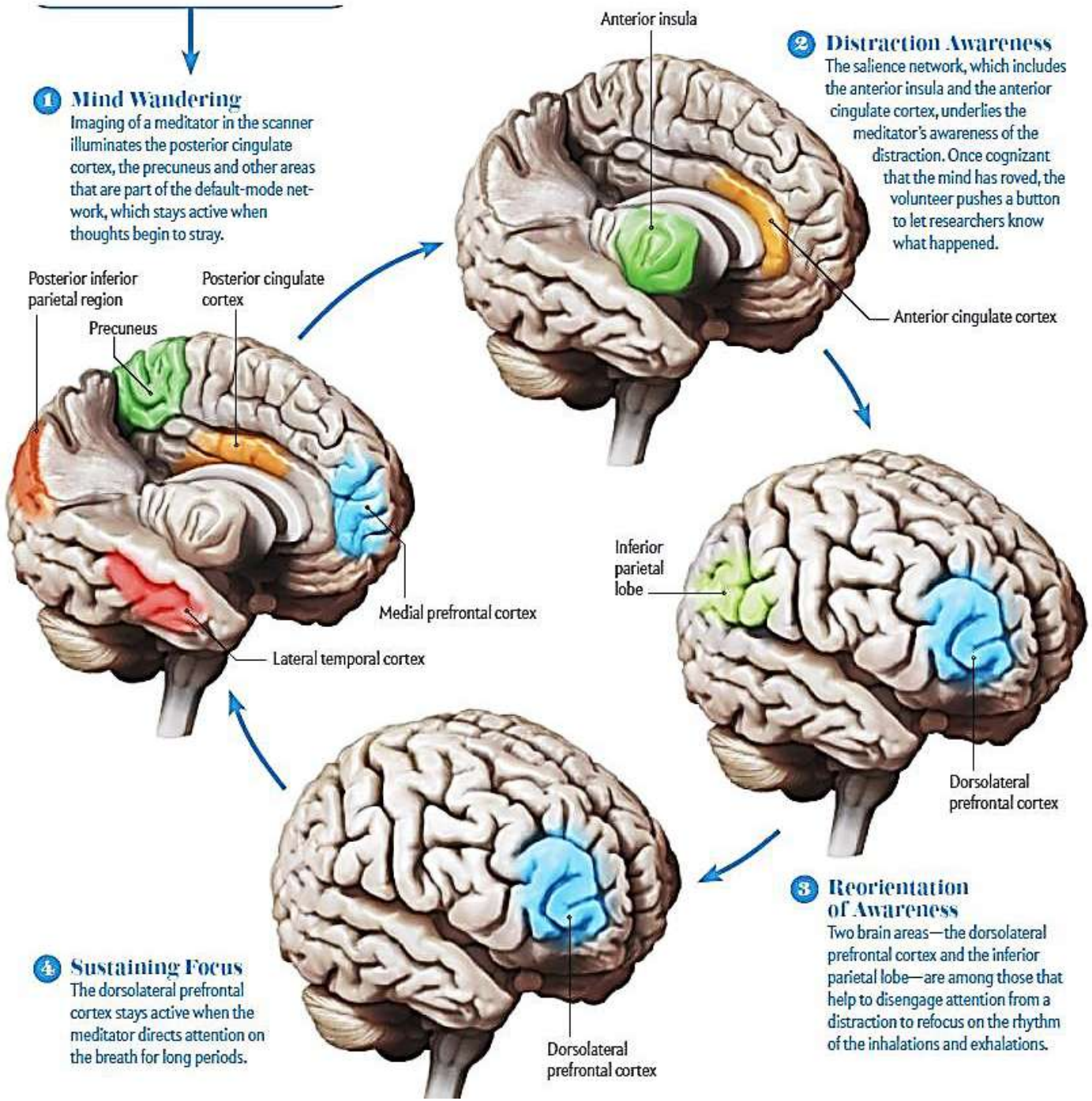
Soc Cogn A

Mindfulness and the presence in the moment

- We are generally absent, transported by an inner monologue separate from the present, many other time our behaviour is controlled by environmental stimuli
- We are driven by impulses and unable to control our behaviour

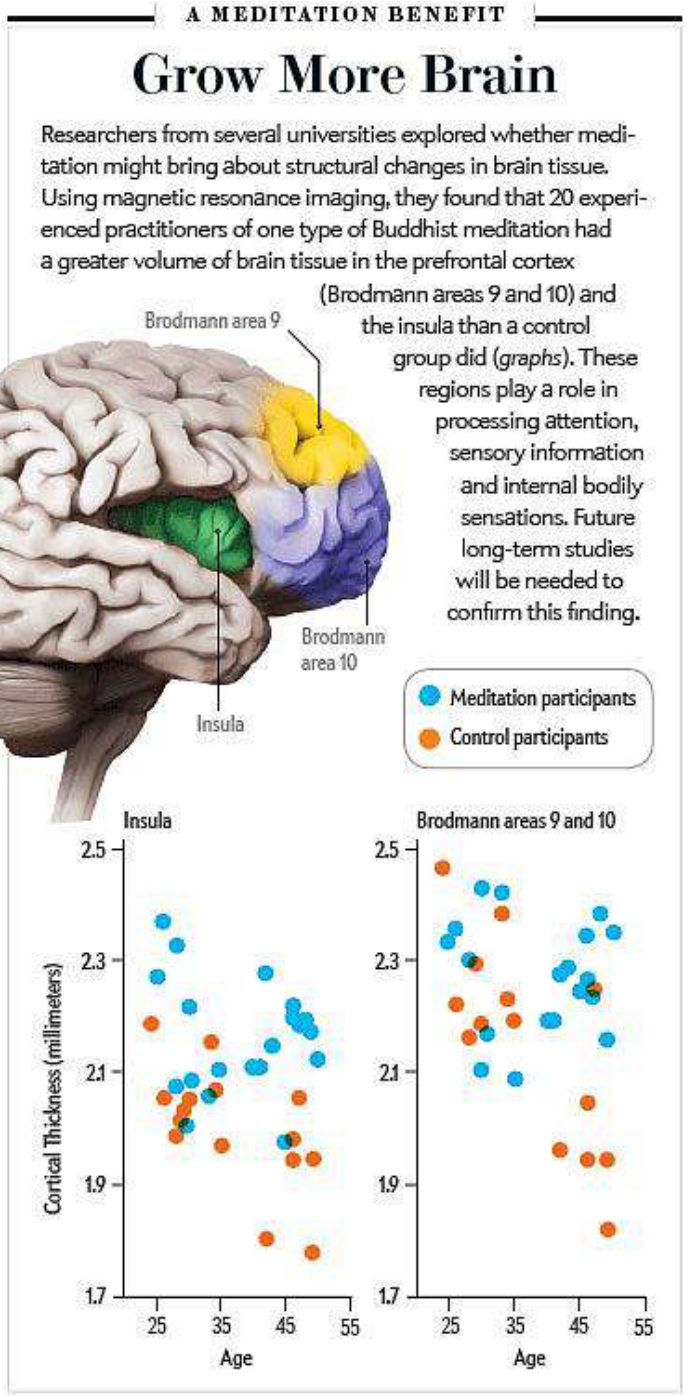
Living the present unconsciously and its consequences

- Unawareness of the appetites and of the signals from the brain centres that codify emotional and impulsive reactions and habits
- Inability of recognizing our mood
- Imability to properly recognize other's emotions
- Unawareness of the "natural" pleasure

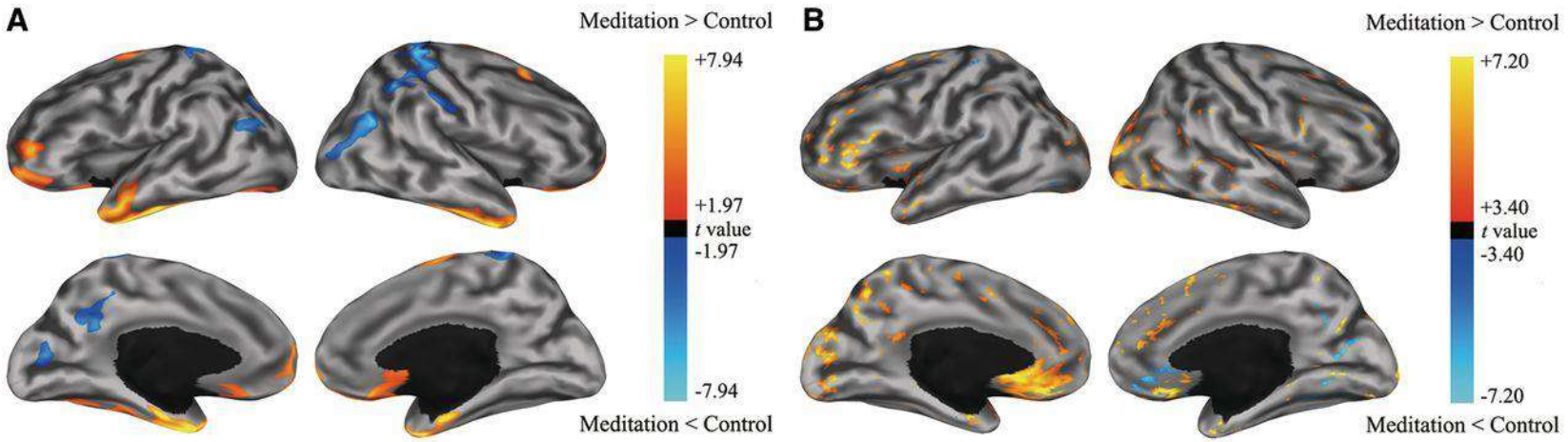

1 Mind Wandering
Imaging of a meditator in the scanner illuminates the posterior cingulate cortex, the precuneus and other areas that are part of the default-mode network, which stays active when thoughts begin to stray.
Posterior inferior parietal region
Posterior cingulate cortex
Precuneus
Medial prefrontal cortex
Lateral temporal cortex
2 Distraction Awareness
The salience network, which includes the anterior insula and the anterior cingulate cortex, underlies the meditator's awareness of the distraction. Once cognizant that the mind has roved, the volunteer pushes a button to let researchers know what happened.
Anterior insula
Anterior cingulate cortex
3 Reorientation of Awareness
Two brain areas—the dorsolateral prefrontal cortex and the inferior parietal lobe—are among those that help to disengage attention from a distraction to refocus on the rhythm of the inhalations and exhalations.
Inferior parietal lobe
Dorsolateral prefrontal cortex
4 Sustaining Focus
The dorsolateral prefrontal cortex stays active when the meditator directs attention on the breath for long periods.
Dorsolateral prefrontal cortex

Mindfulness, meditation and neuroplasticity

Thickening of prefrontal cortex



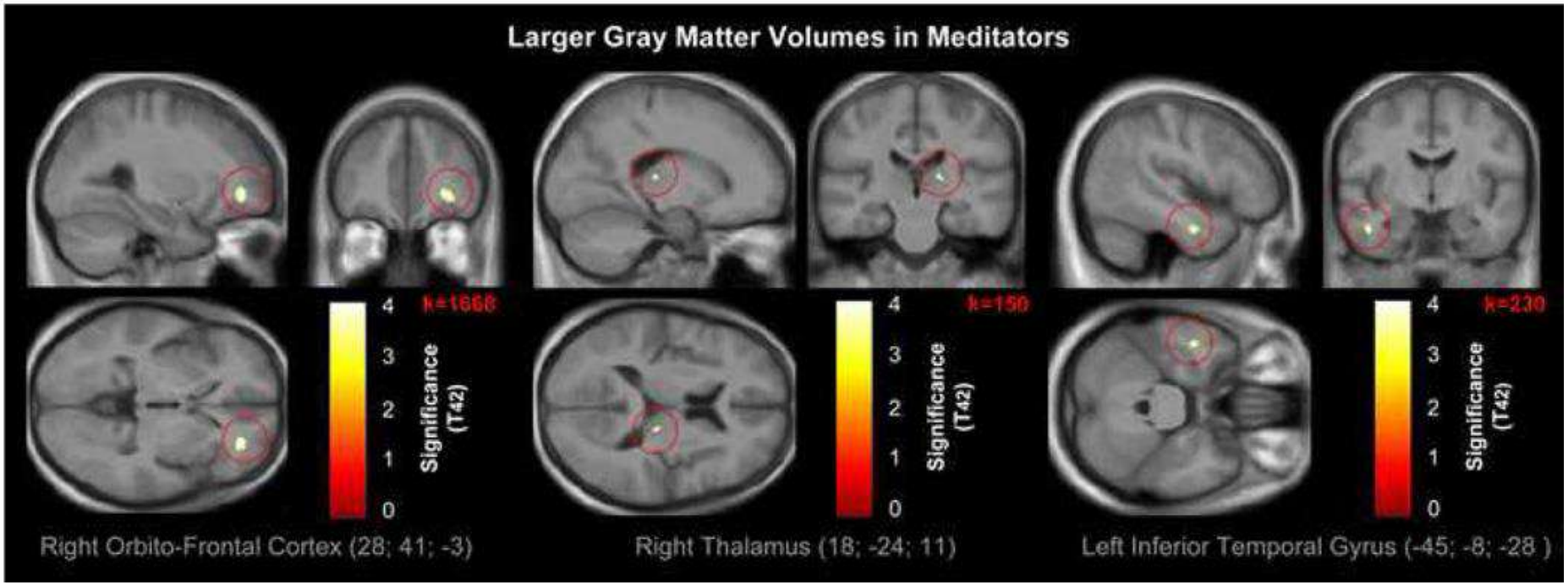
Regional maps showing the statistical differences (A) in cortical thickness and (B) in FA between meditation practitioners and control subjects.

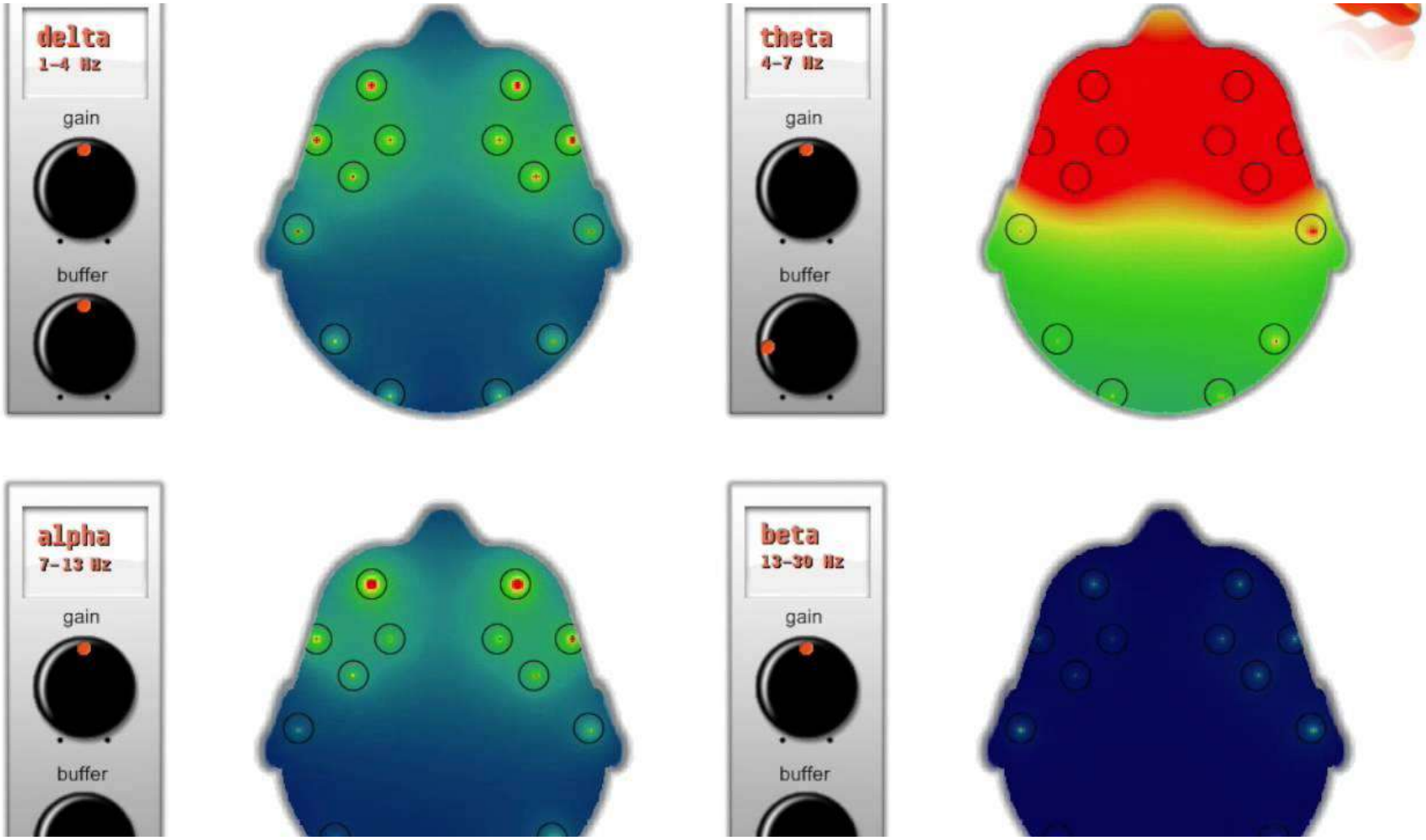


Do-Hyung Kang et al. Soc Cogn Affect Neurosci 2013;8:27-33

Social Cognitive and Affective Neuroscience

Larger gray matter volume in PFC and hippocampus




delta
1-4 Hz
gain
buffer
theta
4-7 Hz
gain
buffer
alpha
7-13 Hz
gain
buffer
beta
13-30 Hz
gain
buffer

Ego depletion and meditation

ELSEVIER

Consciousness and Cognition

Volume 21, Issue 2, June 2012, Pages 1016–1022

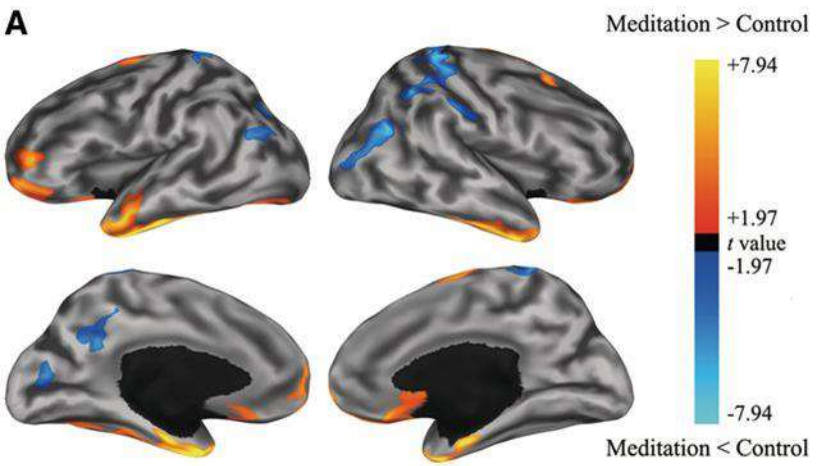
Standing on the Verge: Lessons and Limits from the Empirical Study of Consciousness

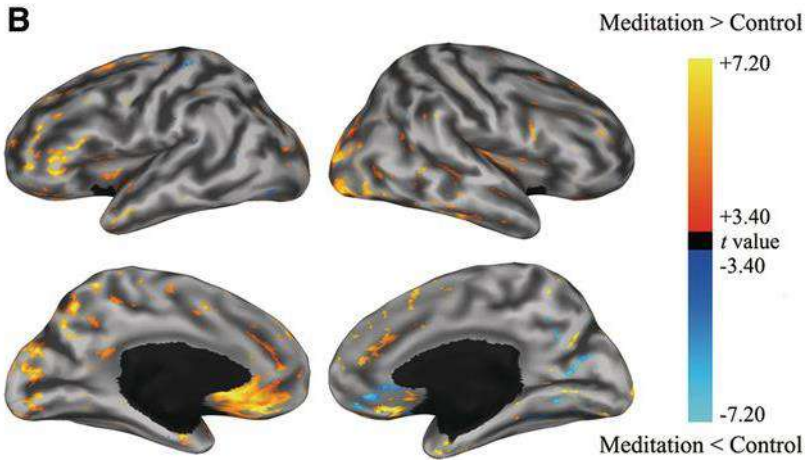
Short Communication

Mindfulness meditation counteracts self-control depletion

Malte Friese[a], Claude Messner[b], Yves Schaffner[a]

Ego depletion and meditation

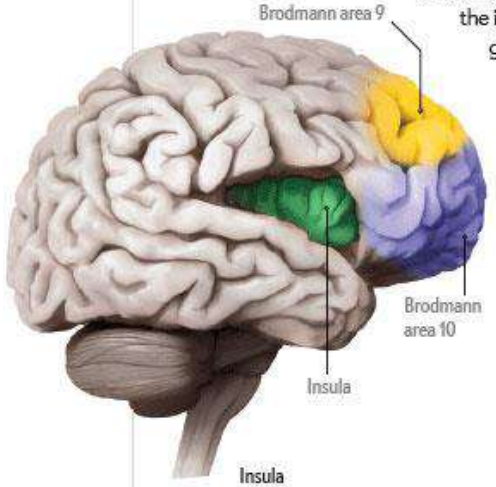


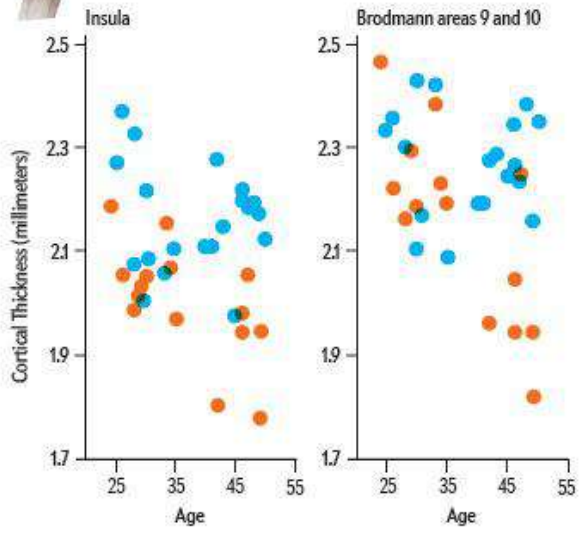


A MEDITATION BENEFIT

Grow More Brain

Researchers from several universities explored whether meditation might bring about structural changes in brain tissue. Using magnetic resonance imaging, they found that 20 experienced practitioners of one type of Buddhist meditation had a greater volume of brain tissue in the prefrontal cortex (Brodmann areas 9 and 10) and the insula than a control group did (*graphs*). These regions play a role in processing attention, sensory information and internal bodily sensations. Future long-term studies will be needed to confirm this finding.





MISURE

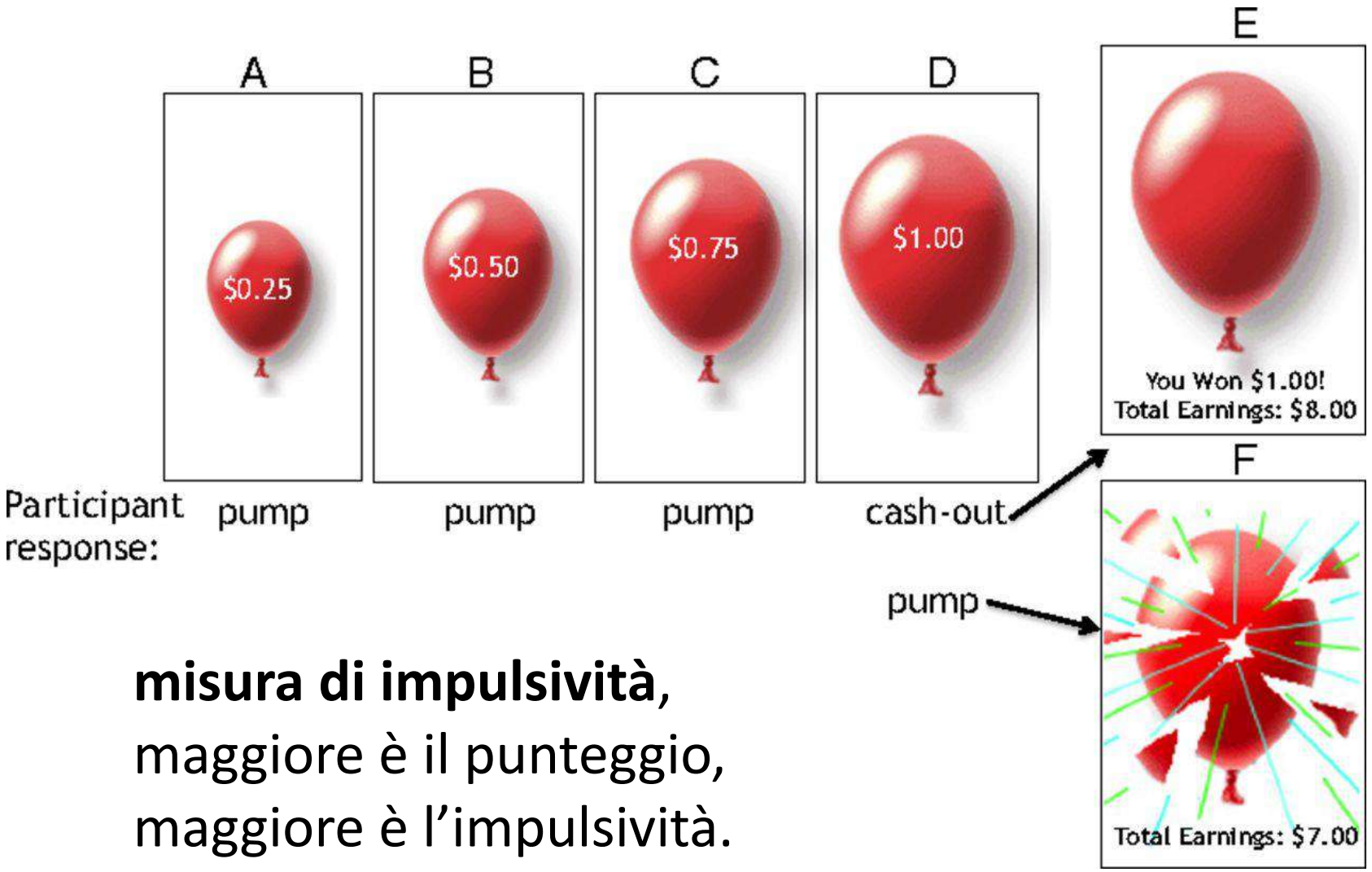
SDQ - Strenghts and Difficulties Questionnaire (Goodman & Goodman, 2009)

punti di forza e le debolezze dell'adolescente in cinque dimensioni:

- **emozioni,**
- **comportamento,**
- **rapporti sociali,**
- **disattenzione/iperattività,**
- ~~**Prosocialità**~~

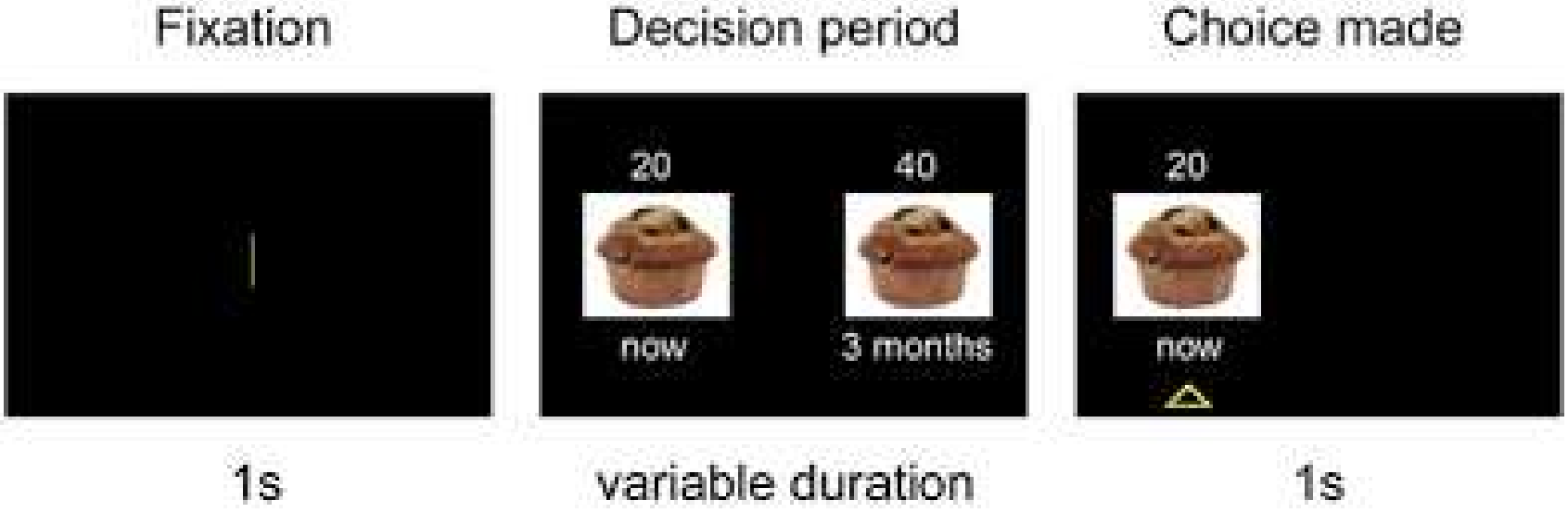
punteggi maggiori corrispondono a maggiori difficoltà nella dimensione in oggetto

Balloon Analogue Risk Task (BART-Y)

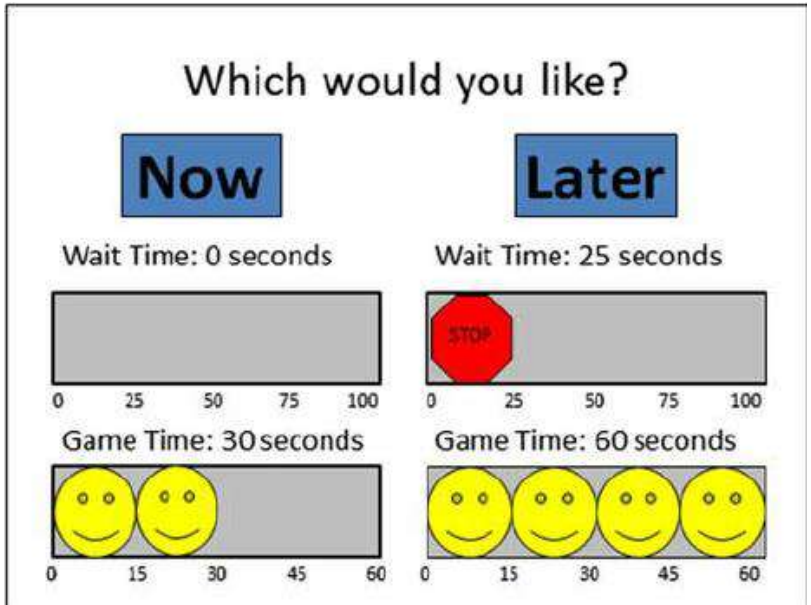


misura di impulsività,
maggiore è il punteggio,
maggiore è l'impulsività.

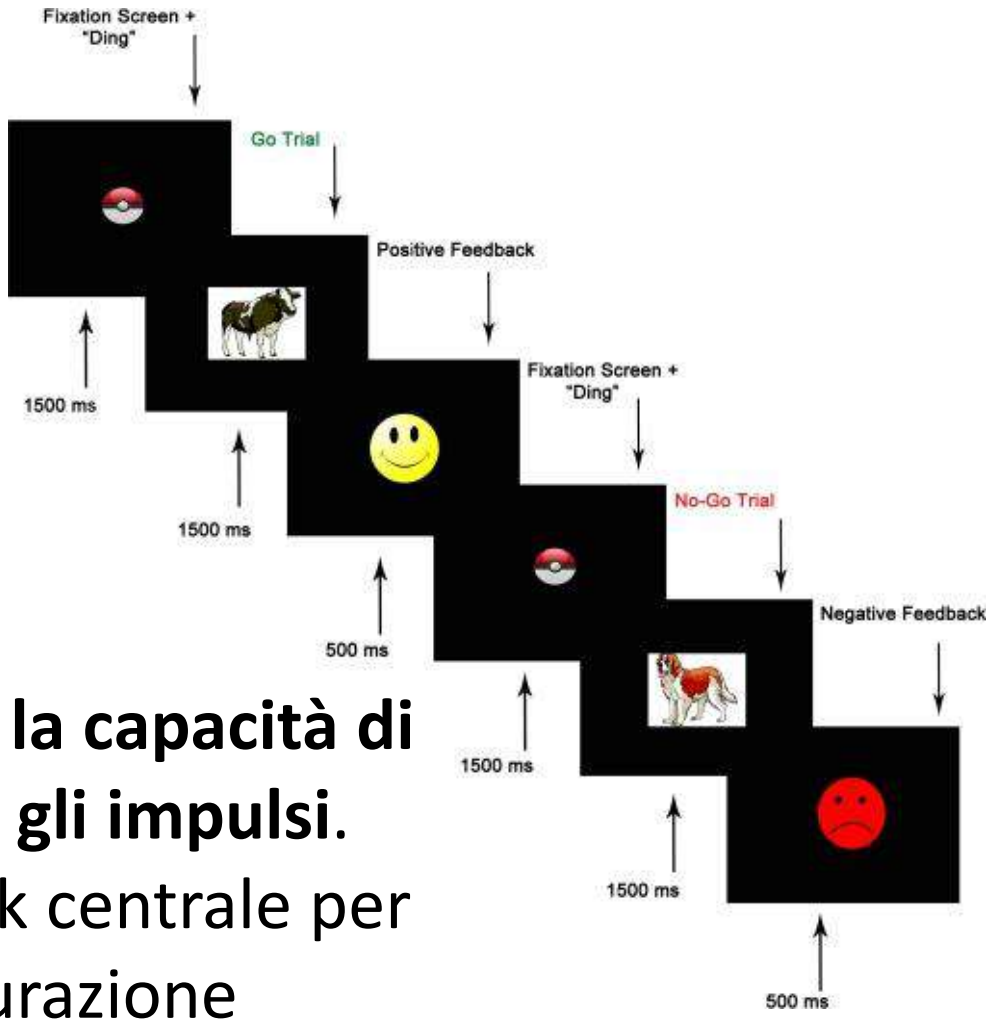
Temporal Discounting Task



misura di impulsività, maggiore è il punteggio, maggiore è l'impulsività.



Go-No Go Task



valuta la capacità di inibire gli impulsi.
Un task centrale per la misurazione dell'autocontrollo

Questionario di soddisfazione scolastica

- somministrato solo a T2
- Misurazione della soddisfazione percepita nei confronti dell'anno scolastico passato.

Quattro item valutavano:

1. La soddisfazione in generale;
2. L'impegno richiesto dalla scuola;
3. Quanto si erano trovati bene con i compagni di classe;
4. Quanto si erano trovati bene con gli insegnanti.

Campione

		condizione		
		controllo	sperimentale	Totale
scuola	Ampezzo	0	17	17
	TS Campi Elisi	0	23	23
	Codroipo	20	20	40
	Forni di Sopra	0	11	11
	TS Istituto Dante	58	0	58
	Muggia	0	23	23
	San Daniele	18	24	42
	Villa Santina	34	0	34
Totale		130	118	248

SDQ - Strenghts and Difficulties Questionnaire (Emozioni)

Condizione	N	Media	DS
Controllo	116	12.24	3.18
Sperimentale	108	11.79	3.25
Totale	224	12.02	3.22

Condizione	N	Media	DS
Controllo	125	11.83	3.18
Sperimentale	110	11.57	3.14
Totale	235	11.71	3.16

SDQ - Strenghts and Difficulties Questionnaire (comportamento)

Condizione	N	Media	DS
Controllo	115	8.37	2.37
Sperimentale	107	8.12	2.37
Totale	222	8.25	2.37

Condizione	N	Media	DS
Controllo	122	8.16	2.46
Sperimentale	106	7.76	2.01
Totale	228	7.97	2.27

SDQ - Strenghts and Difficulties Questionnaire (disattenzione)

Condizione	N	Media	DS
Controllo	114	12.05	3.32
Sperimentale	105	11.30	3.47
Totale	219	11.69	3.40

Condizione	N	Media	DS
Controllo	122	11.50	3.35
Sperimentale	111	11.12	3.34
Totale	233	11.32	3.34

SDQ - Strenghts and Difficulties Questionnaire (rapporti)

Condizione	N	Media	DS
Controllo	114	8.40	3.02
Sperimentale	105	8.39	2.60
Totale	219	8.40	2.82

Condizione	N	Media	DS
Controllo	124	8.29	2.57
Sperimentale	109	8.08	2.52
Totale	233	8.19	2.54

Balloon Analogue Risk Task (BART-Y)

Condizione	N	Media	DS
Controllo	113	386.88	138.51
Sperimentale	107	423.88	127.66
Totale	220	404.88	134.32

Condizione	N	Media		DS
Controllo	117	442.73	**+ 15%**	129.40
Sperimentale	112	467.31	**+ 10%**	112.83
Totale	229	454.75		121.94

Temporal discount task

T1

Condizione	N	Ric immediata	Ric differita
Controllo	113	15 (13.3%)	98 (86.7%)
Sperimentale	109	16 (14.7%)	93 (85.3%)
Totale	222	31 (14.0%)	191 (86.0%)

T2

Condizione	N	Ric immediata	Ric differita
Controllo	121	24 (19.8%)	97 (80.2%)
Sperimentale	110	21 (19.1%)	89 (80.9%)
Totale	231	45 (19.5%)	186 (80.5%)

Frequenze e proporzioni cambiamento scelte

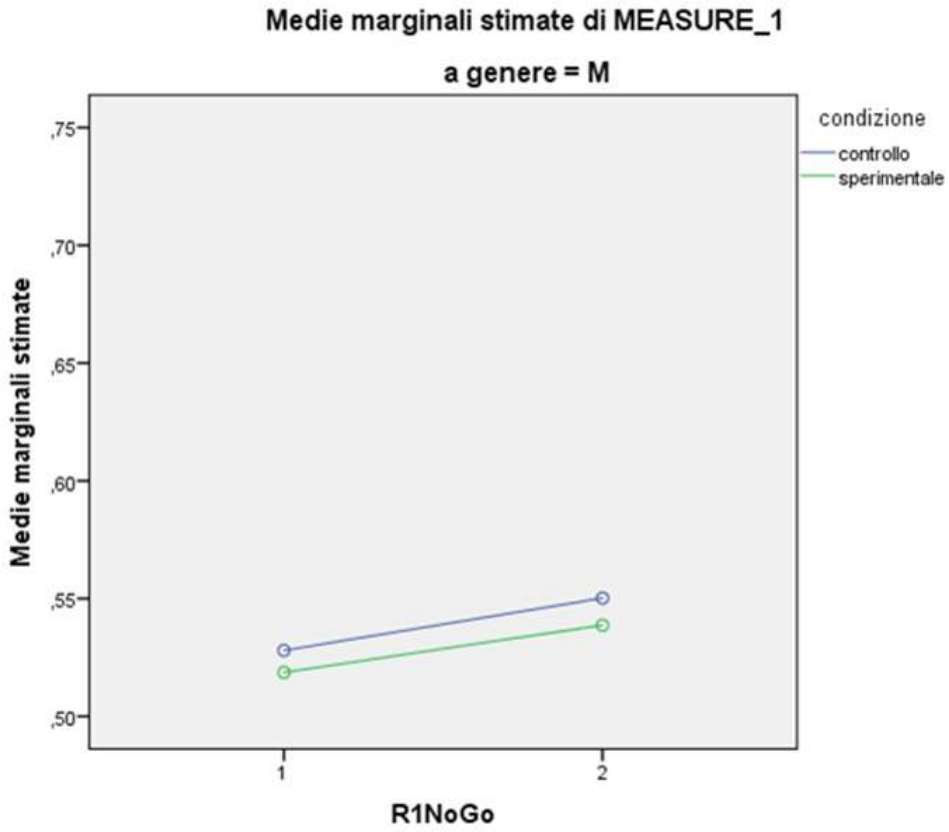
Condizione	Da ric. differita a ric. immediata	Stessa scelta	Da ric. immediata a ric. differita
Controllo	13 (12.5%)	87 (83.7%)	4 (3.8%)
Sperimentale	15 (14.9%)	78 (77.2%)	8 (7.9%)

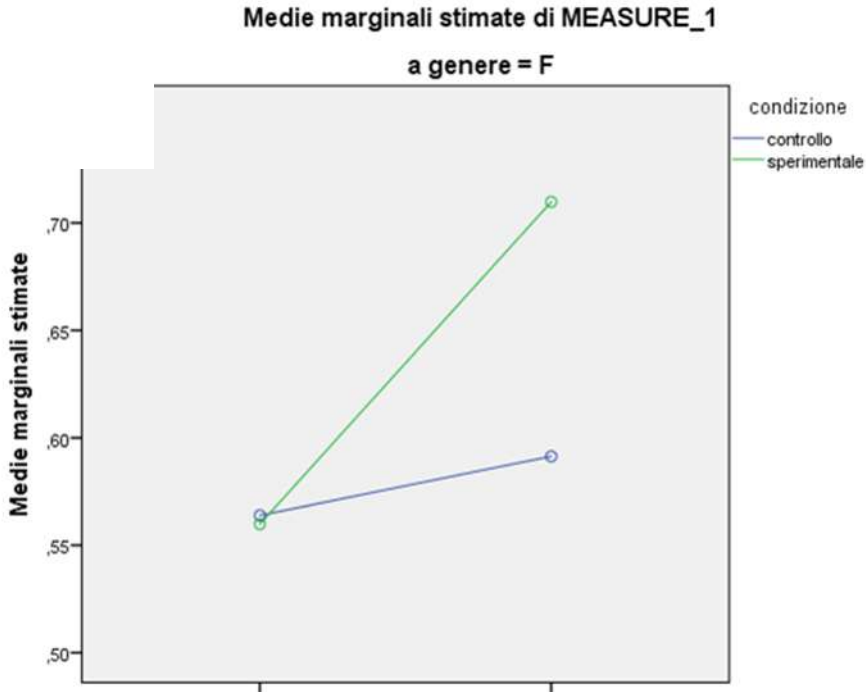
nella condizione sperimentale c'è una maggior proporzione di cambiamenti nella direzione della scelta più matura

35% da ricompensa immediata a ricompensa differita, contro il 23% nella condizione di controllo

Proporzione Accuratezza Go-NoGo Round 1 NoGo (medie)

Condizione	Media		DS
Controllo T1	.54		.24
Sperimentale T1	. 54		.22
Controllo T2	.57	+ 0.3	.23
Sperimentale T2	.62	+ 0.8	.24


Medie marginali stimate di MEASURE_1
a genere = M
condizione
controllo
sperimentale
Medie marginali stimate
,75
,70
,65
,60
,55
,50
1
2
R1NoGo


Medie marginali stimate di MEASURE_1
a genere = F
condizione
controllo
sperimentale
Medie marginali stimate
,70
,65
,60
,55
,50

Soddisfazione anno scolastico

	Controllo M (ds)	Sperimentale M (ds)	p (df)	p
Soddisfazione	2.86 (.82)	3.01 (.81)	1.441 (235)	.15
Impegno richiesto	2.97 (.75)	3.07 (.73)	1.070 (236)	.29
Compagni	3.26 (.90)	3.28 (.80)	.647 (236)	.52
Insegnanti	2.86 (.86)	3.11 (.76)	2.283 (235)	.02

JUST/2014/ACTION GRANTS

RISE

Reinforce Inner Strength Effectively to combat bullying

Civiform

Co-funded by the Rights, Equality and Citizenship (REC) Programme of the European Union

RISE

Alcuni risultati

con Test Multidimensionale dell'Autostima (Bracken, 1992 e 2005) adattato

1) Relazioni interpersonali: come il soggetto valuta i suoi rapporti sociali, con i pari e con gli adulti;

2) Competenza nel controllo sull'ambiente: la sensazione di essere in grado di dominare gli eventi della propria vita;

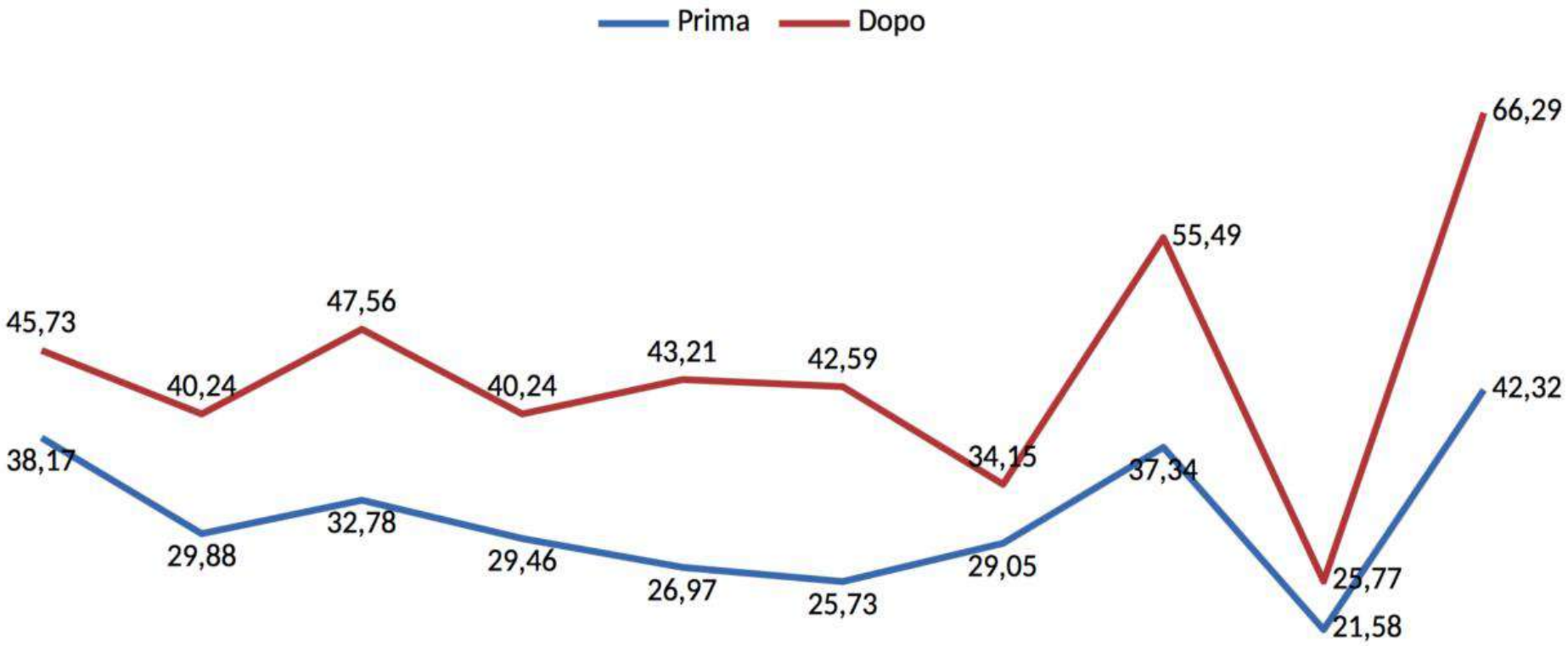
3) L'emotività: la vita emotiva, la capacità di controllare le emozioni negative;

4) Il successo scolastico: i successi o i fallimenti sperimentati nella classe;

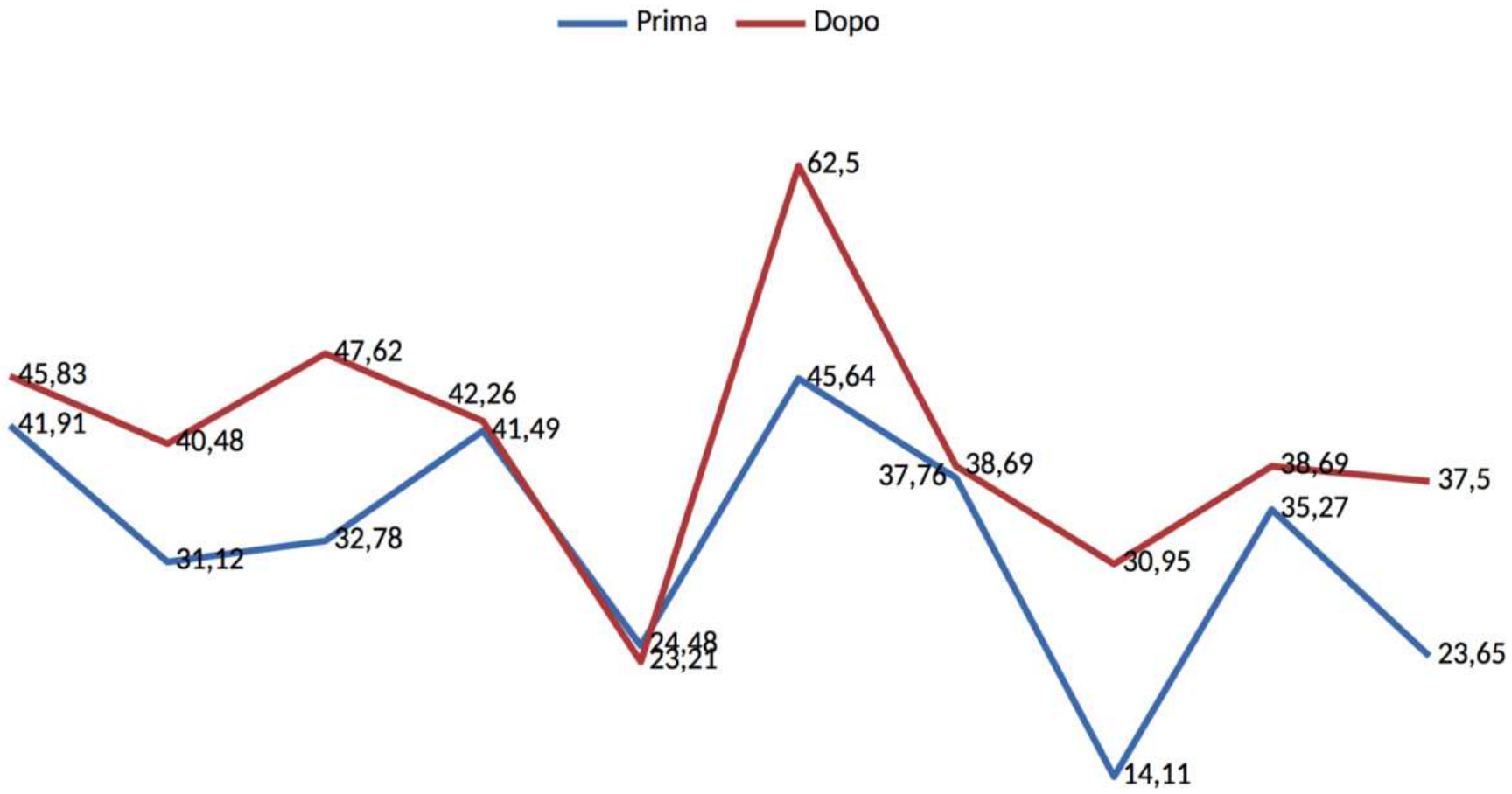
5) La vita familiare: le relazioni nella famiglia, il grado in cui si sente amato e valorizzato;

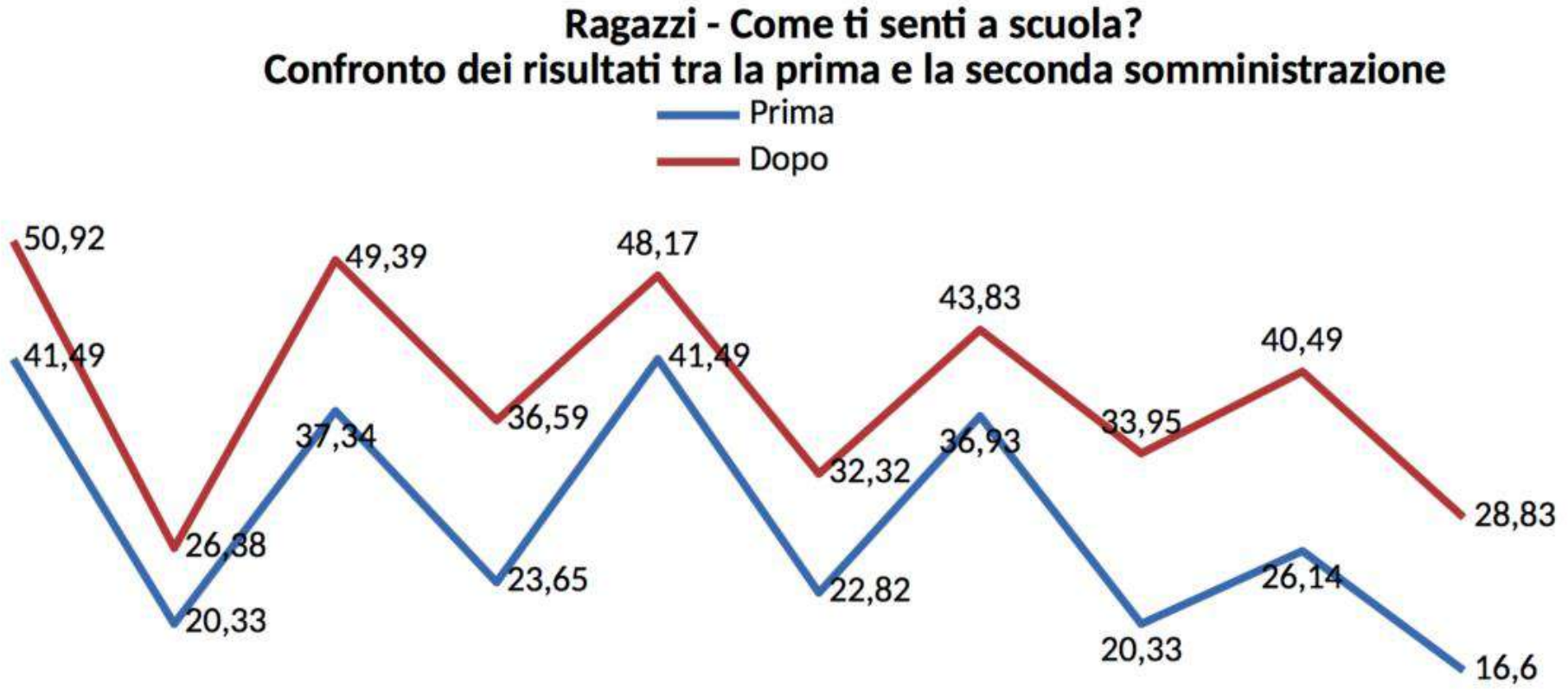
6) Il vissuto corporeo: la percezione del suo aspetto, delle capacità fisiche e sportive, ecc.

Ragazzi - Tu e gli altri
Confronto dei risultati tra la prima e la seconda somministrazione

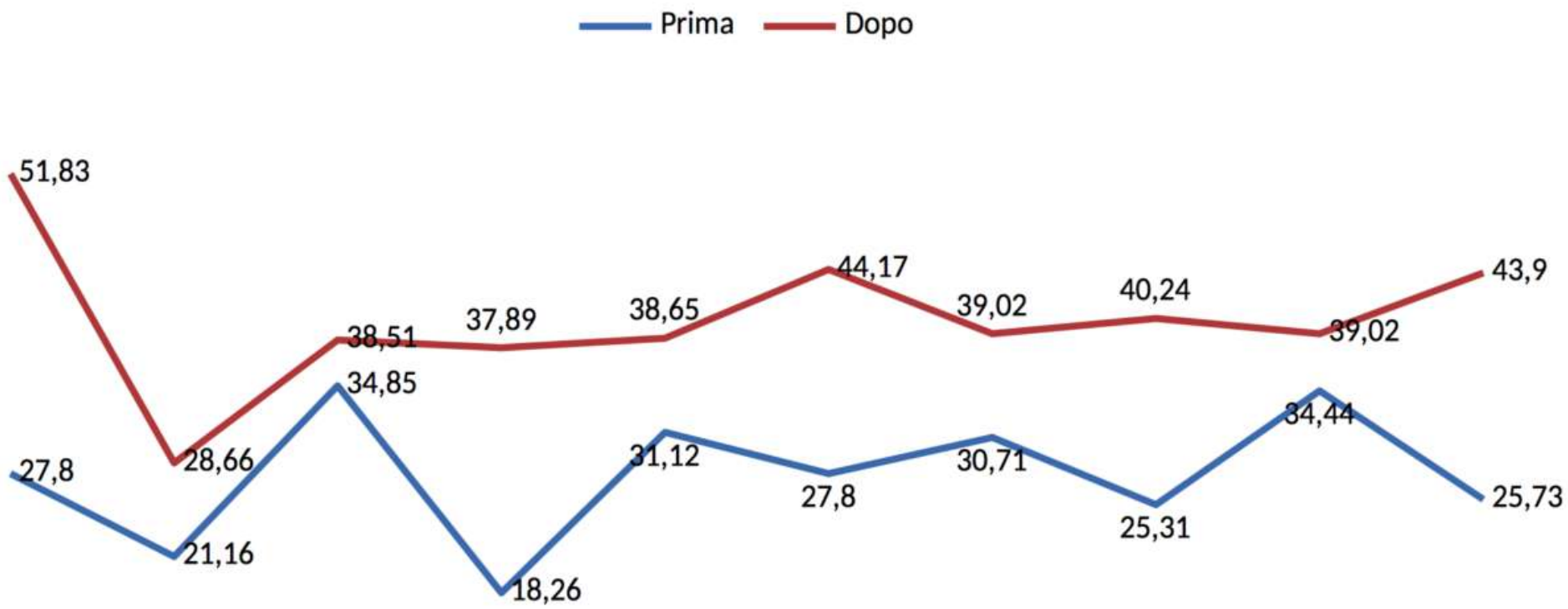


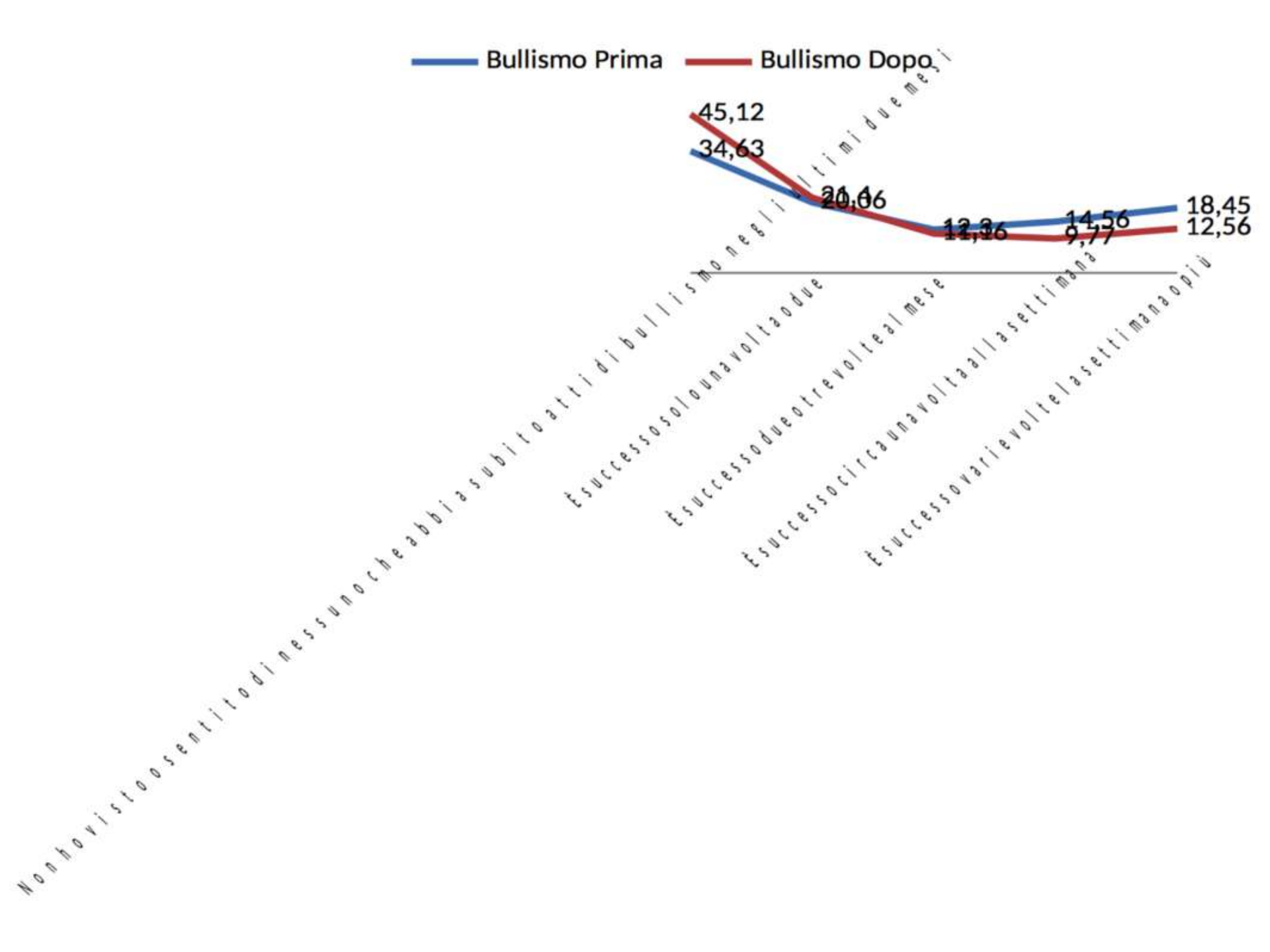
Ragazzi - Come ti senti di solito?
Confronto dei risultati tra la prima e la seconda somministrazione




Ragazzi - Come ti senti a scuola?
Confronto dei risultati tra la prima e la seconda somministrazione
Prima
Dopo
50,92
49,39
48,17
43,83
40,49
41,49
36,59
41,49
33,95
28,83
32,32
26,88
37,34
36,93
23,65
22,82
26,14
20,33
20,33
16,6

Ragazzi - Come ti senti all'interno del colleggio?
Confronto dei risultati tra la prima e la seconda somministrazione




Bullismo Prima
Bullismo Dopo
45,12
34,63
20,66
14,56
18,45
12,56
Non ho visto o sentito di nessuno che abbia subito atti di bullismo negli ultimi due mesi
È successo solo una volta due
È successo due o tre volte al mese
È successo circa una volta alla settimana
È successo varie volte la settimana o più

REGIONE AUTONOMA FRIULI VENEZIA GIULIA
Azienda Sanitaria Universitaria Integrata di Trieste

SISSA

Dipartimento di Scienze della Vita

LE BUONE PRATICHE ONLUS

UNIVERSITÀ DEGLI STUDI DI TRIESTE

comune di trieste

ITALIA CONI COMITATO REGIONALE FRIULI VENEZIA GIULIA

Sport Emozioni e Cervello

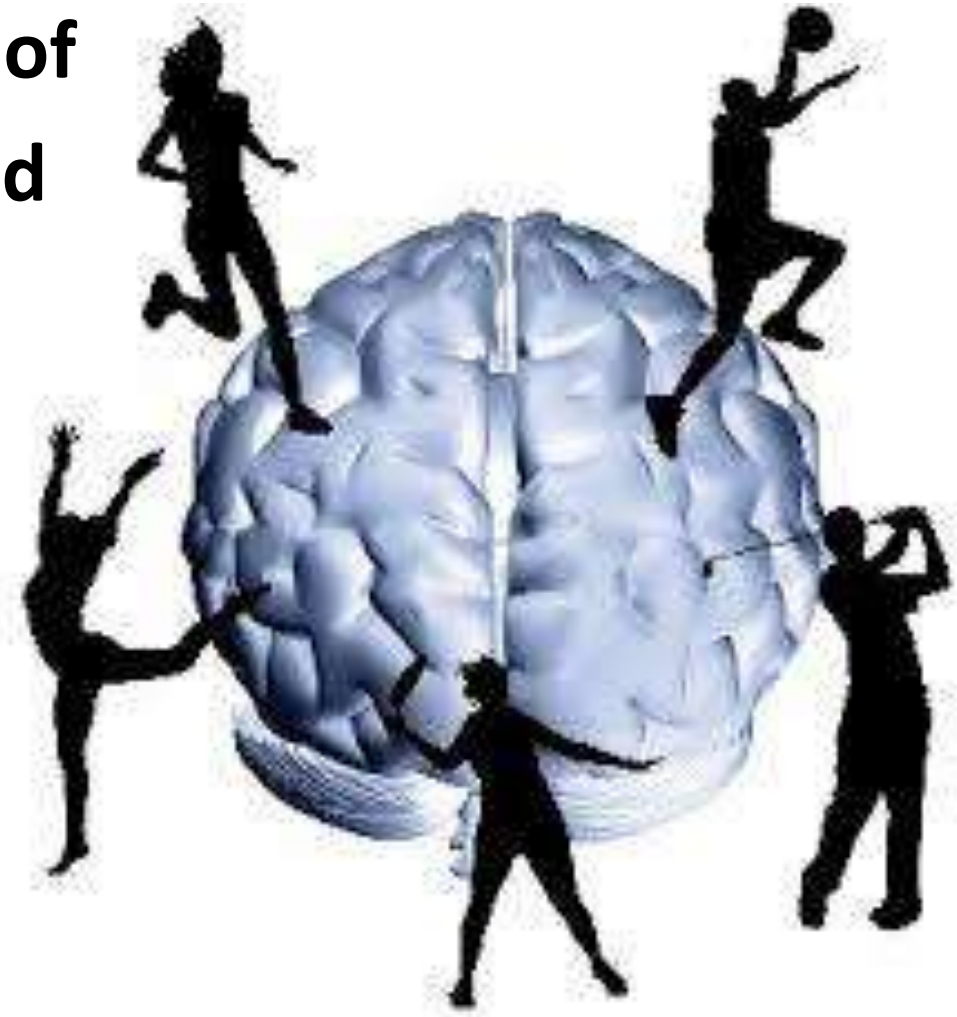
2015-2017

SPORT, BRAIN, EMOTIONS AND EXECUTIVE FUNCTIONS

Sports, cognitive functions, executive functions and well-being

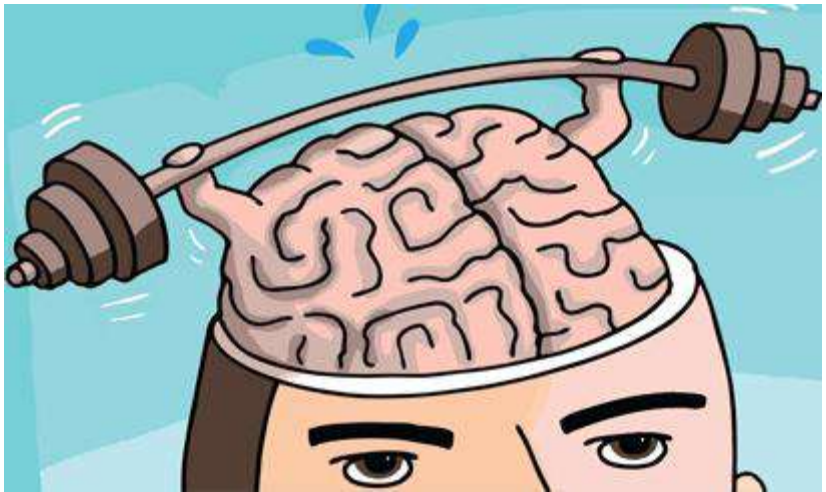
- Verburgh L et al. Physical exercise and executive functions in preadolescent children, adolescents and young adults: a meta-analysis. Br J Sports Med. 2014 Jun;48(12):973-9; Smith PJ, et al. Aerobic exercise and neurocognitive performance: a meta-analytic review of randomized controlled trials. Psychosom Med. 2010 Apr;72(3):239-52; Guiney H, Machado L. Benefits of regular aerobic exercise for executive functioning in healthy populations. Psychon Bull Rev. 2013 Feb;20(1):73-86; Norris R, Carroll D, Cochrane R The effects of physical activity and exercise training on psychological stress and well-being in an adolescent population. J Psychosom Res. 1992 Jan; 36(1):55-65

- **Physical exercise increases neuroplasticity**
- **Physical exercise activates the brain reward system and the system of endogenous opioids and cannabinoids**

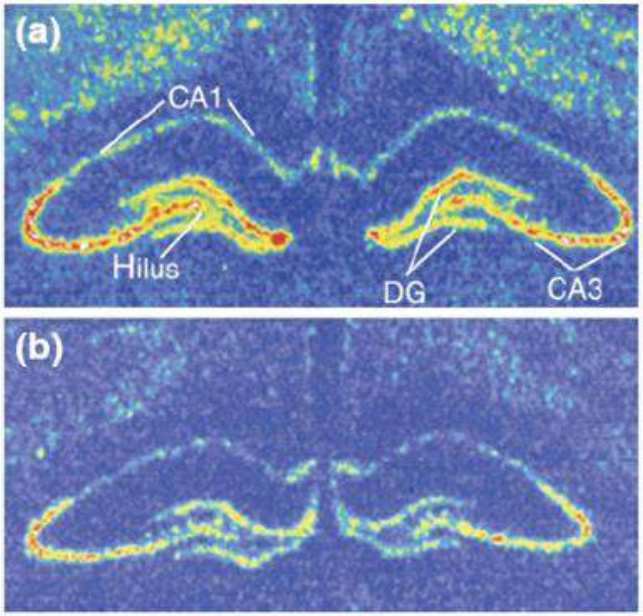


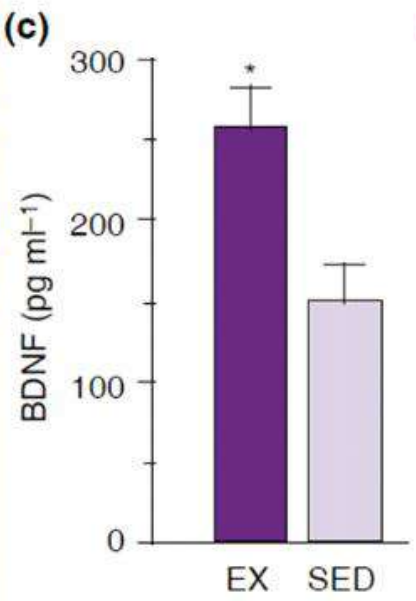
Sport and neuroplasticity

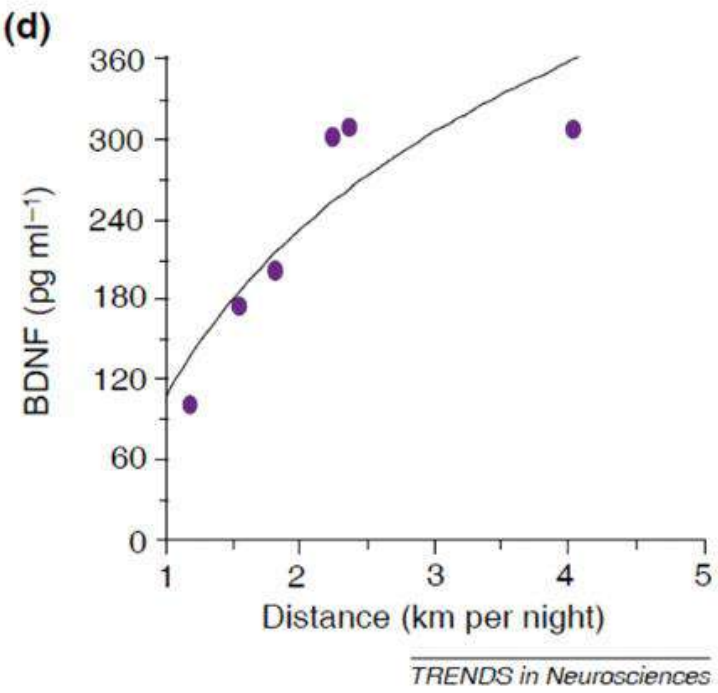
- Physical acticity stimulates the production of growth factors, the first promoters of neuroplastic phenomena

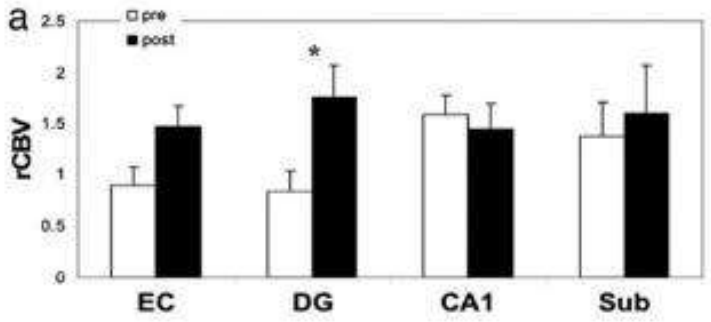


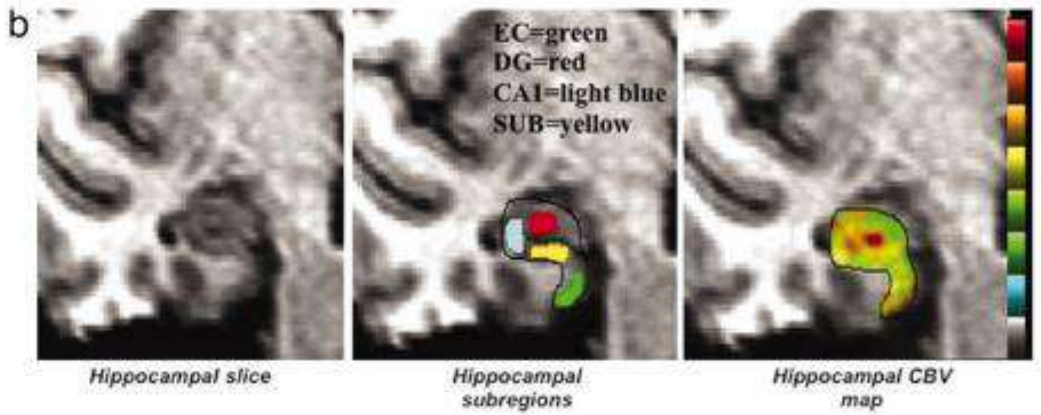
Running and BDNF in hippocampus











Exercise Selectively Increases Dentate Gyrus CBV in Humans and Correlates with Aerobic Fitness and Cognition

Pereira A C et al. PNAS 2007;104:5638-5643

Cell Transplantation, Vol. 20, pp. 99–111, 2011

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Adult Hippocampal Neurogenesis: A Possible Way How Physical Exercise Counteracts Stress

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§Joint laboratory for Brain function and Health (BFAH), Jinan University andThe University of Hong Kong, GuangZhou, PR China

It was considered that neurogenesis only occurred during the embryonic and developmental stage. This view has greatly changed since the discovery of adult neurogenesis in two brain regions: the hippocampus and the olfactory bulb. Recently, it is suggested that altered hippocampal neurogenesis is related to pathophysiology of mood disorders and mechanism of antidepressant treatments. Accumulating knowledge about the effects of physical exercise on brain function suggests a special role of adult hippocampal neurogenesis in cognitive and mental health, even though the functional significance of adult neurogenesis is still debated. The beneficial effects of running correlating with increased adult neurogenesis may provide a hint that newborn neurons may be involved, at least in part, in the counteractive mechanism of physical exercise on stress-related disorders, like depression. The present review provides an overview of recent findings to emphasize the possible involvement of hippocampal neurogenesis in mediating the beneficial effects of physical exercise on counteracting stress.

The International Journal of Neuropsychopharmacology

CINP

The International Journal of Neuropsychopharmacology

The International Journal of Neuropsychopharmacology (2005), 8: 357-368

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The antidepressant effect of running is associated with increased hippocampal cell proliferation

Astrid Bjørnebekk [a1], Aleksander A. Mathé [a2] and Stefan Brené [a1a2c1]

[a1] Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden

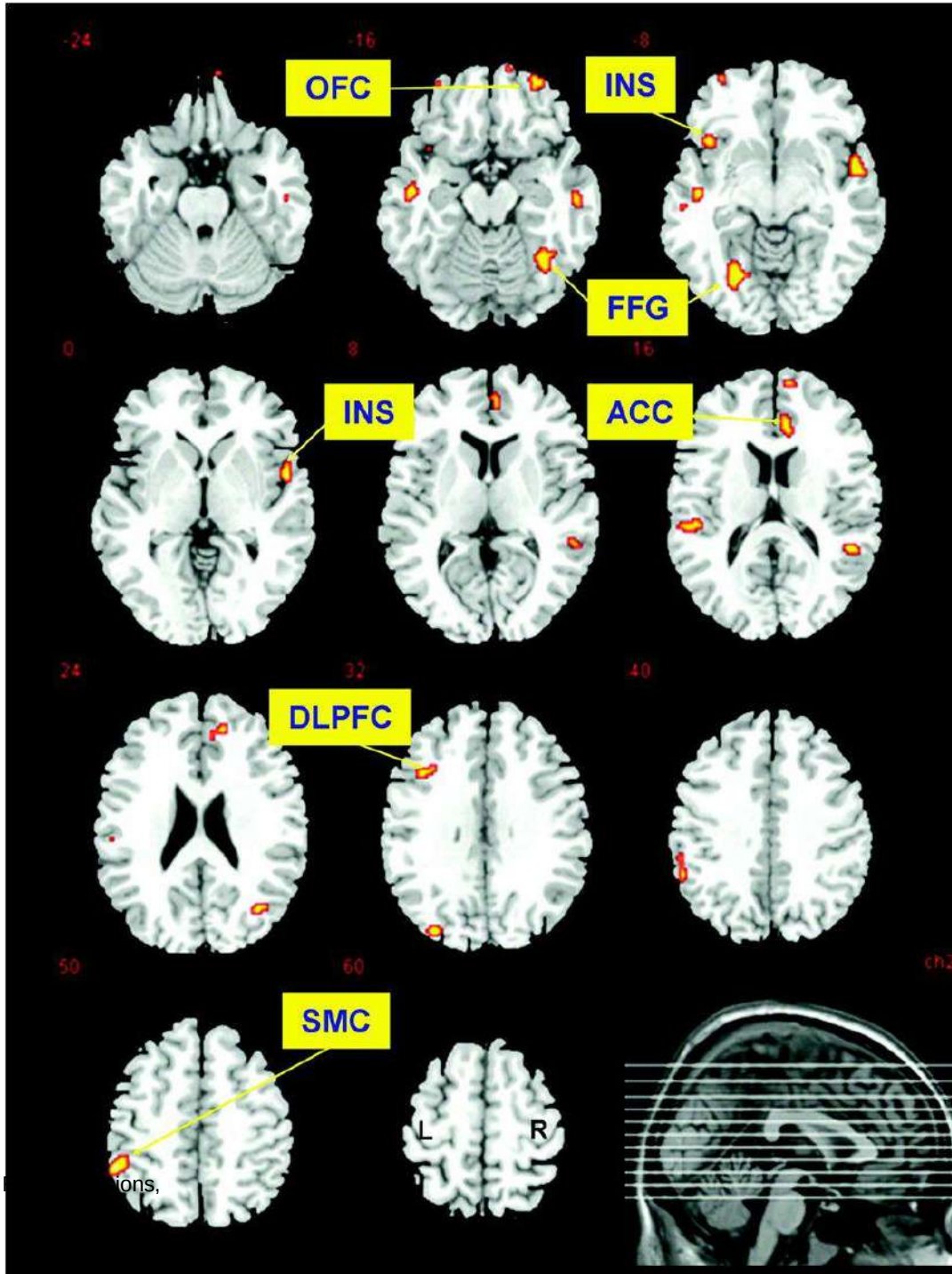
[a2] Division of Psychiatry, Neurotec Department, Karolinska University Hospital, Huddinge, Stockholm, Sweden

Abstract

Correlation of opioidergic binding in runners with VAS ratings of euphoria.

Henning Boecker et al. Cereb. Cortex 2008;18:2523-2531

Cerebral CORTEX



Physical exercise and endocannabinoids

REVIEW

Endocannabinoids and exercise

A Dietrich, W F McDaniel

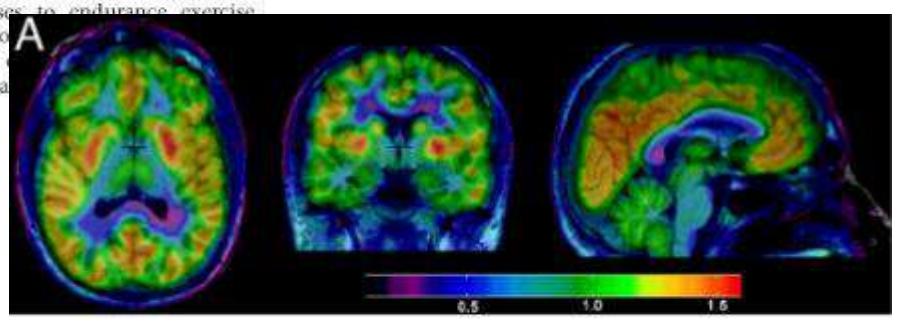
Br J Sports Med 2004;38:536–541. doi: 10.1136/bjsm.2004.011718

Exercise induces changes in mental status, particularly analgesia, sedation, anxiolysis, and a sense of wellbeing. The mechanisms underlying these changes remain unknown. Recent findings show that exercise increases serum concentrations of endocannabinoids, suggesting a possible explanation for a number of these changes. This article provides an overview of this emerging field.

An exercise induced altered state of consciousness has long been appreciated by endurance athletes. The effect has been well documented in the popular literature and subjected to scientific investigation.[1–3] In the late 1960s, the psychological changes associated with prolonged physical activity were often described

However, there are a number of serious problems with the "endorphin hypothesis."[11 12] Studies examining the exercise-endorphin connection produced equivocal results, and many of the studies were plagued by methodological confounds. For instance, β endorphin has almost the same amino acid sequence as other members of the pro-opiomelanocortin family such as the adrenocorticotrophic hormone, making cross reactivity to the detecting antibody a serious confound. Also, adrenocorticotrophic hormone is a stress hormone that is known to increase with exercise, compounding the problem. There are also major inconsistencies between the endorphin hypothesis and the physiological and biochemical responses to endurance exercise. For instance, β endo
opioid receptor, the
that mediates the ana

- + DA & 5-HT
- - glu
- - amygdala
- + opioids



H. Donald Burns et al.,
Positron emission tomography (PET) tracer for in vivo human PET brain imaging of the cannabinoid-1 receptor
PNAS June 5, 2007 vol. 104 no. 23
9800-9805

Il progetto regionale «imparare a gestire le emozioni»

- Attività di formazione agli studenti su meccanismi dei processi mentali e strategie di regolazione delle emozioni e per l'autocontro con peer education
- Attività di aggiornamento del personale docente e di informazione per genitori
- Messa a punto e utilizzo di una App per una ricerca/intervento sulle variabili momentanee ed ecologiche delle emozioni nei ragazzi

Grazie per l'attenzione!!

Stefano Canali

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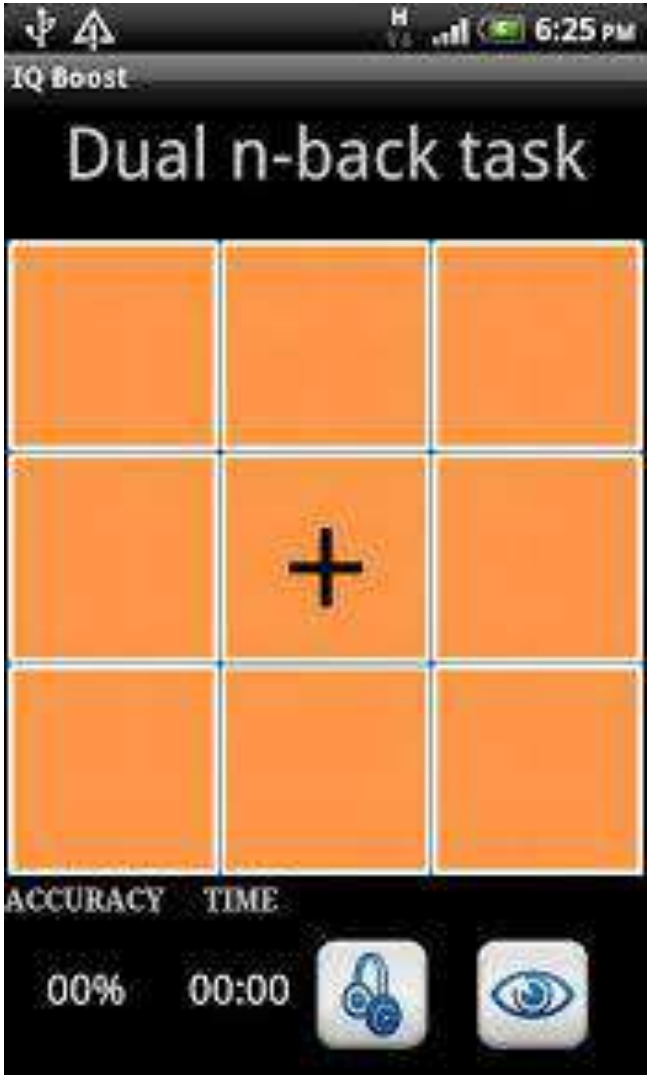

http://brainworkshop.sourceforge.net