



HRV

DESPERTAR PARA LA SALUD

Prof. Luis Gonzaga de Moura Junior

**MÁS QUE UN
SISTEMA DE
ESTRÉS...**

**ES UN SISTEMA
DE VIDA...**

**MÁS QUE UN
SISTEMA DE
ESTRÉS...**

SALUD

**ES UN SISTEMA
DE VIDA...**

**MÁS QUE UN
SISTEMA DE
ESTRÉS...**

Proceso dinámico

SALUD

**ES UN SISTEMA
DE VIDA...**

**MÁS QUE UN
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ESTRÉS...**

SALUD

Daño al
sistema

Proceso dinámico

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Protección
del
sistema

Proceso dinámico

**ES UN SISTEMA
DE VIDA...**

SALUD

Protección
del
sistema

Life is a journey,
not a destination.

Ralph Waldo Emerson

Daño al
sistema

Proceso dinámico

SNA

Regulación
Simpatovagal

SNA



SNA
Regulación
Simpatovagal

Enfermedades
Problemas cerebro vasculares
Cancer
Diabetes
Obesidad
Artritis reumatoide
Alzheimer
Epilepsia
Parkinson
Colitis ulcerosa
Dolor crónico primario

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Colitis ulcerosa
Dolor crónico primario

Disfunciones
IBS
Dolor crónico secundario
Ansiedad
Depresión
Insomnio
Estrés crónico
Inflamación de bajo grado
Bloating
GERD
Bruxismo

SNA



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Problemas cerebro vasculares
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Bloating
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Bruxismo

Vida cotidiana
Comportamiento
Actitud
Humor
Concentración
Deporte
Alimentación
Recuperación física y mental
Resiliencia
Edad
Confianza

SNA



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Resiliencia
Edad
Confianza

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SNA



SNA
Regulación
Simpato-vagal

Perspectiva



Protección
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sistema

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Comportamiento

Actitud

Humor

Concentración

Deporte

Alimentación

Recuperación física y mental

Resiliencia

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Daño al
sistema

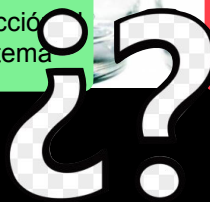
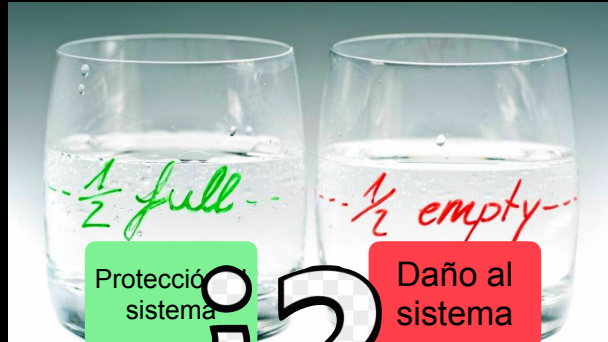
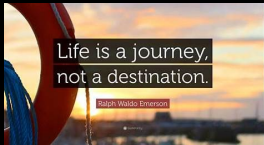


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Regulación
Simpato-vagal

Perspectiva



Perspectiva



Perspectiva



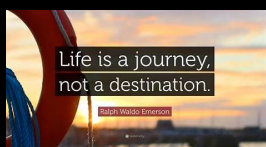


SNA
Regulación
Simpato-vagal

Perspectiva



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Regulación
Simpato-vagal





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Proceso dinámico



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Regulación
Simpatovagal

Proceso dinámico

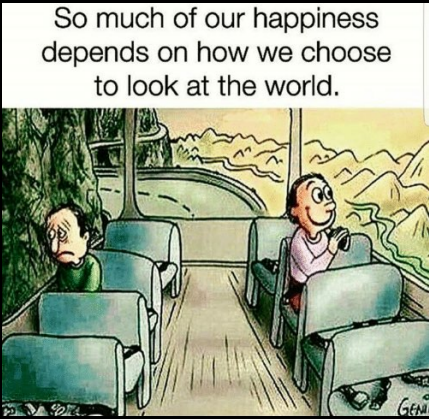
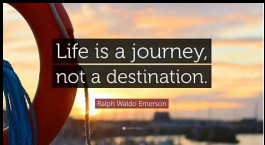
Perspectiva importa





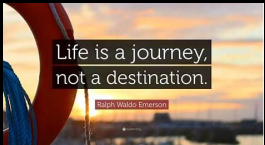
Proceso dinámico

Perspectiva importa



Proceso dinámico

Perspectiva importa





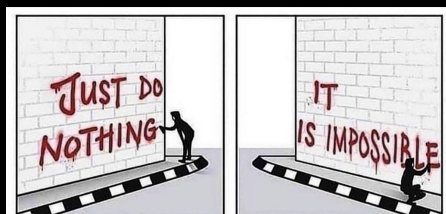
Proceso dinámico

Perspectiva importa



Proceso dinámico

Perspectiva importa

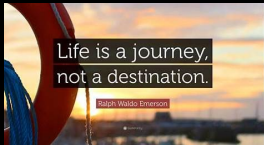


SNA

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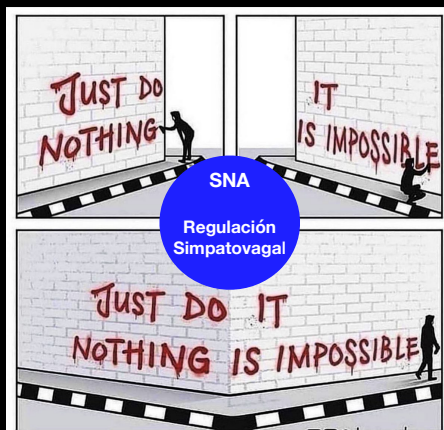
Proceso dinámico

Perspectiva importa



Proceso dinámico

Perspectiva importa





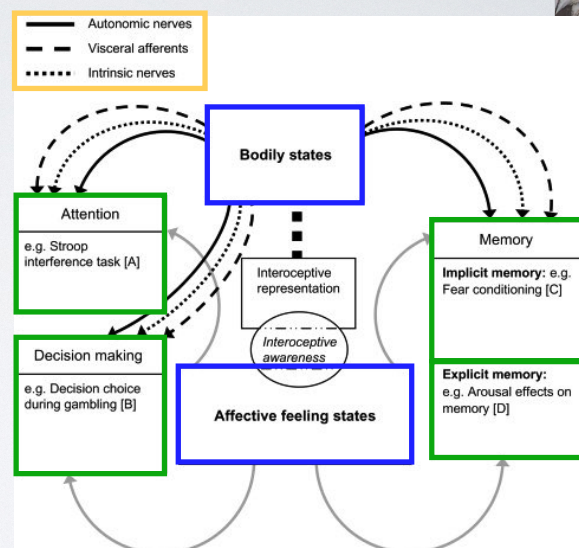
LA REGULACIÓN

Se produce a través de vías y
mecanismos



LA REGULACIÓN

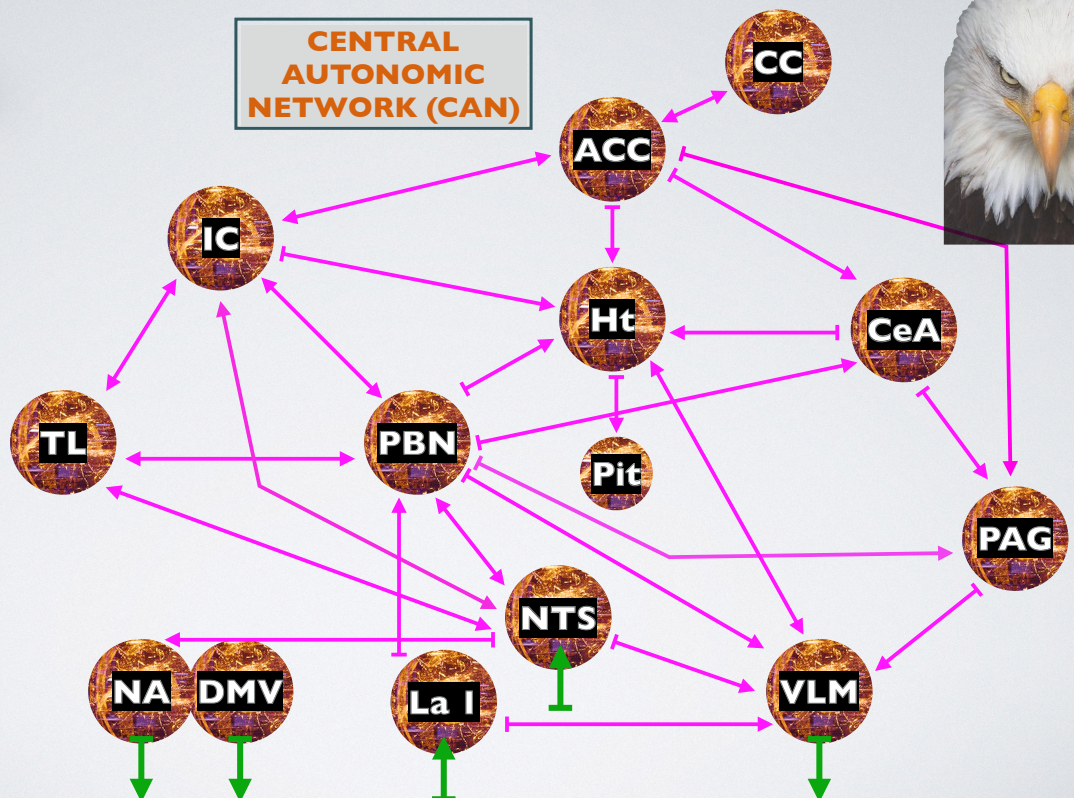
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**CENTRAL
AUTONOMIC
NETWORK
(CAN)**



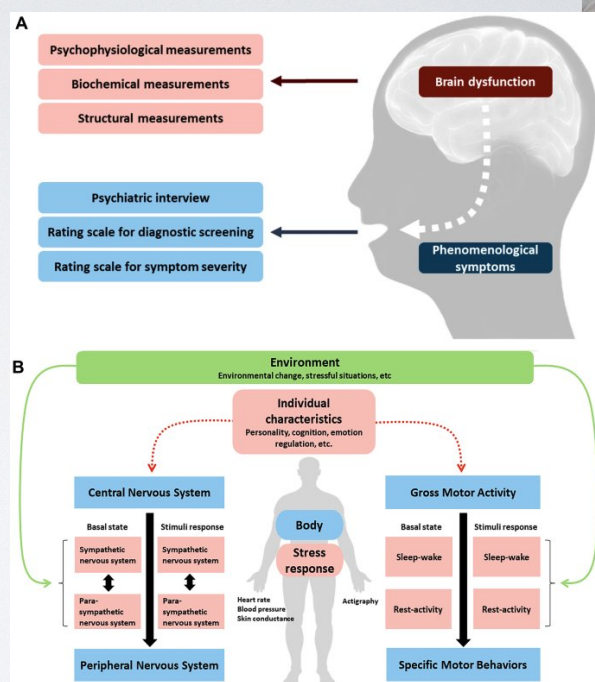
**CENTRAL
AUTONOMIC
NETWORK (CAN)**





LA REGULACIÓN

Se produce a través de vías y
mecanismos





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Psychological Medicine (2016), 46, 2121–2131. © Cambridge University Press 2016
doi:10.1017/S003329171600060X

ORIGINAL ARTICLE

Heart rate variability and depressive symptoms: a cross-lagged analysis over a 10-year period in the Whitehall II study

Results. At follow-up assessment, depressive symptoms were inversely associated with HRV measures independently of antidepressant medication use in men but not in women. Prospectively, lower baseline heart rate and higher HRV measures were associated with a lower likelihood of incident depressive symptoms at follow-up in men without depressive symptoms at baseline. Similar but statistically insignificant associations were found in women. Adjustments for known confounders including sociodemographic and lifestyle factors, cardiometabolic conditions or medication did not change the predictive effect of HRV on incident depressive symptoms at follow-up. Depressive symptoms at baseline were not associated with heart rate or HRV at follow-up in either sex.

Conclusions. These findings are consistent with an aetiological role of the autonomic nervous system in depression onset.



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Review of General Psychology
2006, Vol. 10, No. 3, 229–240

Copyright 2006 by the American Psychological Association
1089-2680/06/\$12.00 DOI: 10.1037/1089-2680.10.3.229

Heart Rate Variability as an Index of Regulated Emotional Responding



International Journal of
*Environmental Research
and Public Health*



Article

The Effects of an Artificial Garden on Heart Rate Variability among Healthy Young Japanese Adults

Sports Med (2016) 46:1461–1486
DOI 10.1007/s40279-016-0484-2



CrossMark

SYSTEMATIC REVIEW

Monitoring Athletic Training Status Through Autonomic Heart Rate Regulation: A Systematic Review and Meta-Analysis

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Emotion Regulation Difficulties Are Not Always Associated With Negative Outcomes on Women: The Buffer Effect of HRV

and HRV measurements at rest. Results show for the 114 female remaining in the study that whereas high emotion regulation difficulties led to higher depressive symptoms severity when resting HRV is low, depressive symptoms remain stable in the same condition but when resting HRV is high. Overall, high resting HRV appears to dampen the consequences of trait emotion regulation difficulties. Further studies are needed to confirm this result, but this suggests that usual response tendencies could be overcome by deactivating or inhibitory processes such as those implied in cognitive flexibility reflected through HRV, according to the neurovisceral integration model.

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Contents lists available at ScienceDirect

Journal of Affective Disorders

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



Short communication

Resting vagal tone is negatively associated with suicide ideation

Thomas Forkmann ^{a,*}, Judith Meessen ^a, Tobias Teismann ^b, Stefan Sütterlin ^{c,d},
Siegfried Gauggel ^a, Verena Mainz ^a

^a Institute of Medical Psychology and Medical Sociology, University Hospital of RWTH Aachen University, Germany

^b Department of Clinical Psychology and Psychotherapy, Ruhr-Universität Bochum, Germany

^c Section of Psychology, Lillehammer University College, Norway

^d Department of Psychosomatic Medicine, Division of Surgery and Clinical Neuroscience, Oslo University Hospital – Rikshospitalet, Norway



Conclusions: The relation between resting vagally mediated HRV and suicide ideation may be interpreted as indicating that reduced inhibitory cognitive control capacity may be a risk factor for suicidality. It may act already early in the suicidal process, before suicidal behavior develops and should be further investigated as potentially clinically important physiological predictor of suicidality.



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Contents lists available at ScienceDirect

Autonomic Neuroscience: Basic and Clinical

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



Review

Clinical and non-clinical depression and anxiety in young people: A scoping review on heart rate variability

Results: In clinical populations of either depression or anxiety, HRV was lower compared to controls. In non-clinical populations of either depression or anxiety, HRV was found to be lower in those who reported more depression or anxiety symptoms.

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High vagally mediated resting-state heart rate variability is associated with superior action cascading



Lorenza S. Colzato^{a,b,c,*}, Laura Steenbergen^{a,d}

^a Leiden University, Cognitive Psychology Unit & Leiden Institute for Brain and Cognition, Wassenaarseweg 52 AK, 2333 Leiden, The Netherlands

^b Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Bochum, Germany

^c Institute for Sports and Sport Science, University of Kassel, Kassel, Germany

^d Amsterdam Brain & Cognition (ABC), University of Amsterdam, The Netherlands

and response inhibition, was assessed in 88 healthy volunteers (age range 18–33). Compared to individuals with low resting-state HRV, participants with high resting-state HRV showed enhanced action cascading performance, both when a disruption (stopping) and change towards an alternative response were required simultaneously, and when requirements were cascaded (i.e. when the stopping process had already finished at the time the change was required). Our findings represent an important step towards extending our understanding of the neurovisceral integration model in cognitive control.

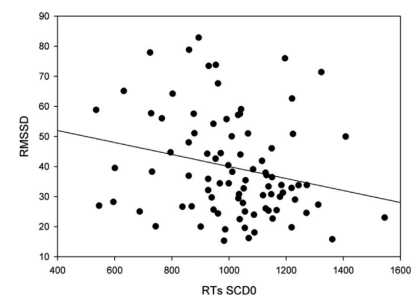


Fig. 2. Scatter diagram of individual root mean squared successive differences (RMSSD) against RTs on stop-change trials with a stop-change delay of 0 ms.

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STRESS
<https://doi.org/10.1080/10253890.2018.1483329>



ORIGINAL ARTICLE



Good decision-making is associated with an adaptive cardiovascular response to social competitive stress

Adrián Alacreu-Crespo^a , Raquel Costa^a , Diana Abad-Tortosa^a , Alicia Salvador^b and Miguel Ángel Serrano^a

^aDepartment of Psychobiology, University of Valencia, Valencia, Spain; ^bLaboratory of Cognitive Social Neuroscience, Department of Psychobiology and IDOCL, University of Valencia, Valencia, Spain

(HF/HRV) levels during the task, compared to Poor decision-makers. Again, competition group good decision-makers, showed lower LF and higher HF/HRV reactivity than the control group, which represents lower HRV stress pattern. Moreover, in the group of losers, good decision-makers had a decline in low frequency (LF) during the task and faster recovery than poor decision-makers. In conclusion, good decision-makers have a more adaptive stress response and higher levels of mental effort, based on total HRV interpretation. Decision-making skills could be a factor in a more adaptive cardiovascular response to competition.



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Positive emotion induction improves cardiovascular coping with a cognitive task

Francisco Molins, Tania Pérez-Calleja, Diana Abad-Tortosa, Adrian

different from control. Experiencing positive emotions seems to favour an adaptive psychophysiological response when faced with a complex cognitive task. These results are discussed in relation to clinical practice and health.



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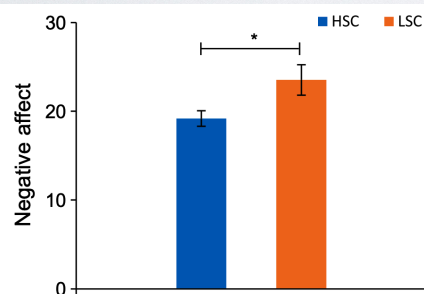


Fig. 3 Negative affect in response to TSST in high ($n = 17$) and low ($n = 17$) self-compassion groups. Data represent the mean and the SEM. HSC high self-compassion, LSC low self-compassion. *means $p < 0.05$

Mindfulness
<https://doi.org/10.1007/s12671-018-0900-9>

ORIGINAL PAPER



Self-compassion Modulates Heart Rate Variability and Negative Affect to Experimentally Induced Stress

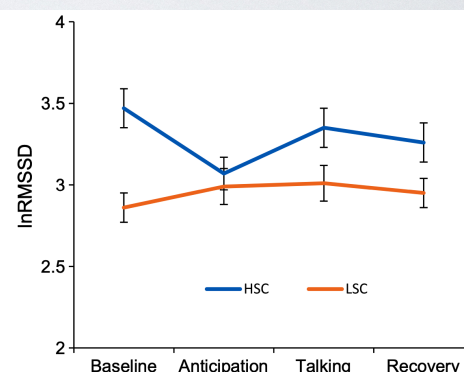


Fig. 2 Heart rate variability to TSST high ($n = 17$) and low ($n = 17$) self-compassion groups. Data are shown with the mean and the SEM. HSC high self-compassion, LSC low self-compassion, lnRMSSD natural log-transformed root mean square of successive differences

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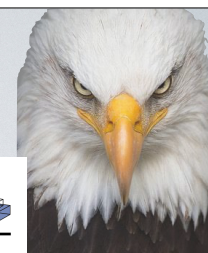
frontiers in
PSYCHOLOGY

REVIEW ARTICLE
published: 01 May 2014
doi: 10.3389/fpsyg.2014.00278



From the heart to the mind: cardiac vagal tone modulates top-down and bottom-up visual perception and attention to emotional stimuli

The neurovisceral integration model (Thayer and Lane, 2000) posits that cardiac vagal tone, indexed by heart rate variability (HRV), can indicate the functional integrity of the neural networks implicated in emotion–cognition interactions. Our recent findings begin to disentangle how HRV is associated with both top-down and bottom-up cognitive processing of emotional stimuli. Higher resting HRV is associated with more adaptive and functional top-down and bottom-up cognitive modulation of emotional stimuli, which may facilitate effective emotion regulation. Conversely, lower resting HRV is associated with hyper-vigilant and maladaptive cognitive responses to emotional stimuli, which may impede emotion regulation. In the present paper, we recapitulate the neurovisceral integration model and review recent findings that shed light on the relationship between HRV and top-down and bottom-up visual perception and attention to emotional stimuli, which may play an important role in emotion regulation. Further implications of HRV on individual well-being and mental health are discussed.





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REVIEW

Open Access

Context matters: the psychoneurobiological determinants of placebo, nocebo and context-related effects in physiotherapy



frontiers
in Physiology

SYSTEMATIC REVIEW
published: 25 September 2020
doi: 10.3389/fphys.2020.549607



Placebo Analgesia, Nocebo Hyperalgesia, and the Cardiovascular System: A Qualitative Systematic Review

Two studies showed that HRV predicted placebo responses on negative emotions and pain (Aslaksen and Flaten, 2008; De

The results indicate that the placebo analgesic effect is associated with a decrease in LF-HRV, that the nocebo hyperalgesic effect is associated with an increase in LF-HRV, and that HRV is a predictor for placebo effects. However, there is no reliable effect of placebo on the LF/HF ratio and HF-HRV.

brain
sciences



Review

Heart Rate Variability and Pain: A Systematic Review

Giuseppe Forte ^{1,2,*}, Giovanna Troisi ³, Mariella Pazzaglia ^{1,2}, Vilfredo De Pascalis ¹ and Maria Casagrande ^{3,*}



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Springer

COGNITIVE, AFFECTIVE & BEHAVIORAL
NEUROSCIENCE

springer.com

Cogn Affect Behav Neurosci. 2018; 18(4): 730–738.

PMCID: PMC6096636

Published online 2018 Apr 30. doi: 10.3758/s13415-018-0600-x

PMID: 29713957

Variable heart rate and a flexible mind: Higher resting-state heart rate variability predicts better task-switching

Lorenza S. Colzato, ^{1,2,3} Bryant J. Jongkees, ¹ Matthijs de Wit, ¹ Melle J. W. van der Molen, ⁴ and Laura Steenbergen ^{1,5}

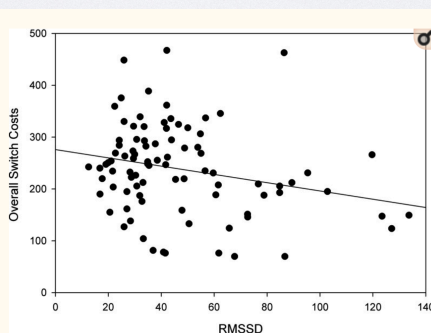


Fig. 2

Scatter diagram of individual root mean squared successive differences (RMSSD) against RTs overall switch costs (collapsed across RSI conditions) in the short response-stimulus interval (RSI) condition





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frontiers
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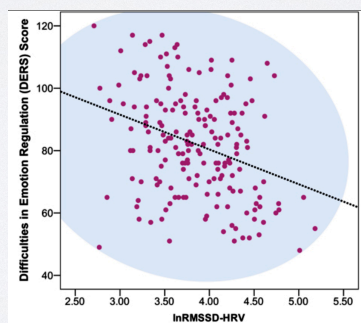
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< Articles

THIS ARTICLE IS PART OF THE RESEARCH TOPIC:
Mechanisms underpinning the link between emotion, phy
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ORIGINAL RESEARCH article
Front. Psychol., 10 March 2015 | <https://doi.org/10.3389/fpsyg.2015.00261>

Resting heart rate variability predicts self-reported difficulties in emotion regulation: a focus on different facets of emotion regulation



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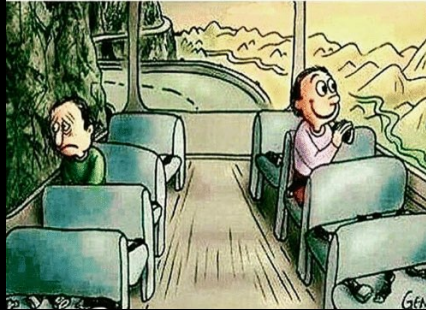


Lo decides tu

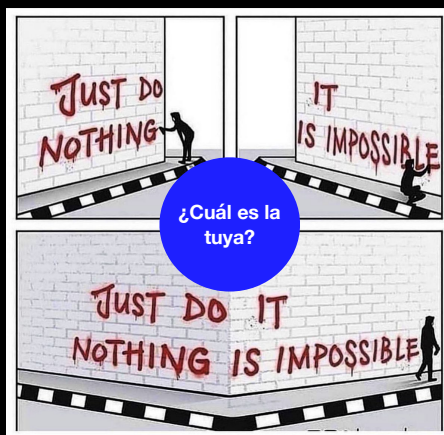


Proceso dinámico

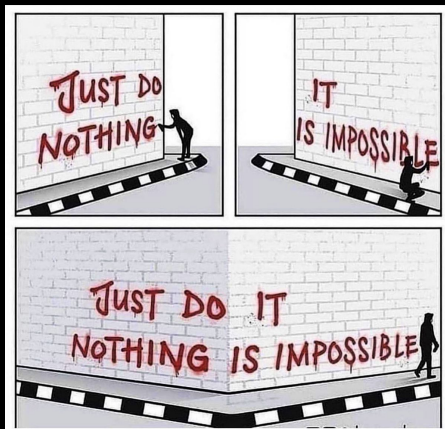
So much of our happiness depends on how we choose to look at the world.



Perspectiva importa



Perspectiva importa



Perspectiva importa



SNA
INTEGRATIVO

**“Encontraremos un camino,
y si no, lo crearemos.”**



SNA
INTEGRATIVO

SNA INTEGRATIVO

¿ CUÁNTO VALE ?

“Encontraremos un camino,
y si no, lo crearemos.”

