

Ai Confini Della Vita

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Cosa ne pensano le folle?

Se chiediamo a google si notano 2 cose:

- a) Nessun rimando VS lavori scientifici
- b) Assoluta preponderanza di titoli sulle “esperienze di premorte”

Fatto a mano, modello grande,
da 23 Eur



La Morte ?

La morte è l'unico fenomeno a verificarsi, sotto i nostri occhi e da sempre, senza indurre apprendimento alcuno.

Se chiedete a me, che avrò visto morire oltre 1000 esseri umani, oppure a chi non ha mai visto un cadavere (neppure in fotografia) le risposte sulla “morte in se” saranno pari, quanto ad informazione.

C'è soltanto una spiegazione

*L'uomo non vede la morte, ma soltanto ciò
che la precede.*

In attesa per un uomo che potrebbe
andare incontro ad un mistero



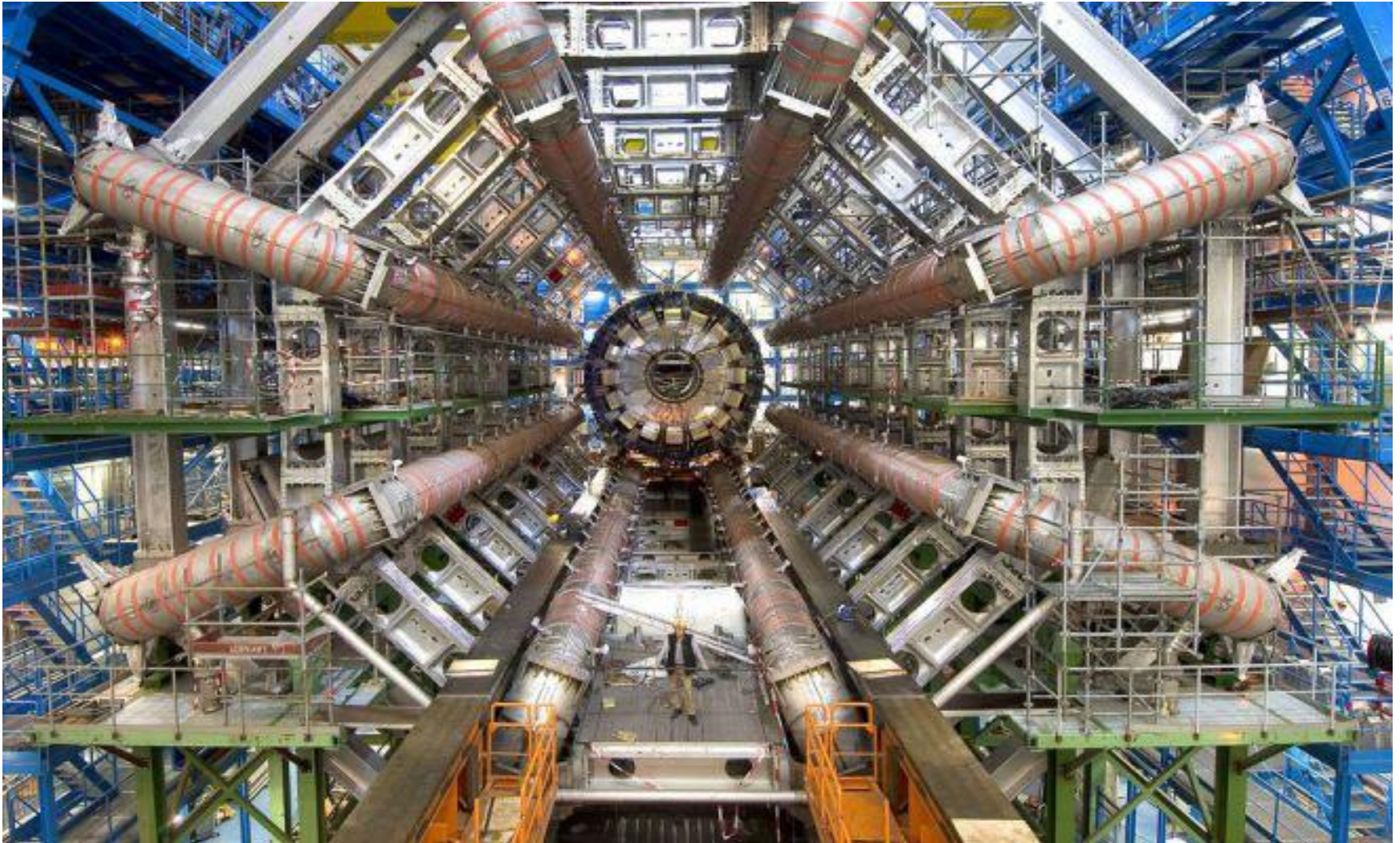
Un altro mistero



Due considerazioni intuitive

- I Misteri rappresentano una delle ragioni di spesa, da parte delle società, più forti ed istintive.
- Quando l'uomo investe molto in qualcosa lo fa per una ragione strettamente connessa alle forze evolutive ed alla sua sopravvivenza.

Immensamente grande per studiare
l'immensamente piccolo



Come dimenticarli?



Certamente John ed Elwood non erano a caccia della particella di Dio, bensì alla ricerca (ONESTA) dei soldi per pagare le tasse a Chicago del loro vecchio orfanotrofio, dove avevano ricevuto amore



Vita VS Coscienza

Cosa intendiamo con “essere in vita”?

Quasi costantemente la risposta comprende una chiara (Netta) divisione mente/corpo.

C'è qualcosa che possiamo affermare in proposito?

Is There a Cartesian Renaissance of the Mind or Is It Time for a New Taxonomy for Low Responsive States?

Francesca Pistoia and Marco Sarà

Abstract

The mass media have recently pointed out the likelihood of diagnostic errors in post-coma patients. Late recoveries of consciousness, even after 20 years, might indicate hidden misdiagnoses that are not corrected over a long period of time. The rate of misdiagnoses of patients in a vegetative state is very high when based on behavioral assessment strategies alone. An extremely restrictive motor repertoire, as occurs in locked-in patients, seems to be the major factor responsible for diagnostic confusion. Functional neuroimaging techniques are regarded as promising tools in unearthing covert awareness in behaviorally unresponsive patients who are unable to produce any motor output. However, unless we believe that these patients persistently live in an unconvincing *Cartesian-like state*, in which thinking and acting are mutually dissociated, we have to admit that a new taxonomy for low responsive states is called for. This taxonomy should take into account the possible syndromic overlap between disorders of consciousness and locked-in syndrome. We should suspect a “locked-in state” in behaviorally unresponsive patients unless we reach strong evidence that such is not the case; this is the only way to avoid dramatic misdiagnoses.

Key words: initially conscious state; locked in; overlap; vegetative state

Un esperimento con 160 persone..



IT'S JUST A RIDE

foto di Veronika Rapouchova



IT'S JUST A RIDE (Bill Hicks)

- Il mondo è come un giro di giostra in un parco giochi. Quando scegli di salirci pensi che sia reale, perché le nostre menti sono potenti. La giostra va su e giù e gira intorno, ti fa tremare e rabbrivire, ed è coloratissima e rumorosa ed è divertente, per un po'.
Alcuni ci sono da tanto tempo e cominciano a chiedersi: "E' la realtà o è solo un giro di giostra?"
Altri si sono ric...ordati e vengono da noi per dirci: "Ehi, non vi preoccupate, non abbiate paura, mai. Perché questo è solo un giro di giostra."
E noi ... uccidiamo quelle persone.
"Fatelo tacere!"
"Abbiamo investito un sacco in questo giro di giostra. Fatelo tacere!"
"Guardate le mie rughe di preoccupazione. Guardate il mio conto in banca. E la mia famiglia. Questo deve essere reale."
E' solo un giro di giostra.
- Ma uccidiamo sempre quella brava gente che tenta di dircelo, l'avete mai notato? E lasciamo che i demoni si scatenino. Ma non ha importanza perché..è solo un giro di giostra.
E possiamo cambiare le cose in ogni momento.
E' solo una scelta.
Niente sforzi, niente lavoro, niente occupazione, niente risparmi o denaro.
Una scelta, proprio ora, fra paura e amore.
- Gli occhi della paura vogliono che voi mettiate serrature più grandi alla vostra porta, che comprate delle armi, che vi isolate.
Gli occhi dell'amore, invece, ci vedono tutti come una cosa sola.
Ecco cosa possiamo fare per cambiare il mondo, proprio adesso, in un giro di giostra migliore.
Prendiamo tutti i soldi che spendiamo in armi e nella difesa ogni anno e spendiamoli invece in cibo, vestiti ed educazione per i poveri del mondo, e basterebbero a farlo molte volte, nessun essere umano escluso, e potremo esplorare lo spazio, insieme, sia interiore che esteriore, per sempre, in pace.

Paura?



LIS e riconoscimento cosciente delle emozioni del/nel/sul viso altrui

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Behavioral/Systems/Cognitive

Impaired Conscious Recognition of Negative Facial Expressions in Patients with Locked-in Syndrome

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I Pazienti “chiusi dentro” sbagliano a riconoscere le emozioni negative sui volti altrui ma non le situazioni negative o positive

tives were pointed to in each trial, to ensure that patients had explored the whole array and chosen the response they preferred). Patients' responses were recorded by an expert examiner, specifically trained to decode eye movements and totally unaware of purposes and predictions of the experiment. For both patients and controls, the examiner recorded responses by pressing the corresponding keys on the computer keyboard.

Each patient completed the two tasks in separate sessions each lasting ~50 min, whereas control participants were tested in a single session lasting ~1 h; task order was counterbalanced across subjects.

Results

Task 1: Recognition of facial expressions

Percentages of correct responses are shown in Figure 3A. A two-way mixed ANOVA, with emotion (disgust, happiness, fear, anger, surprise, and sadness) as a within-subject factor and group as a between-subject factor, revealed a significant main effect of emotion [$F_{(5,125)} = 28.405, p = 0.0001$], with recognition of fear (0.57) being worse than all other emotions (disgust = 0.79; happiness = 0.99; anger = 0.75; surprise = 0.91; and sadness = 0.72). There was also a main effect of group [$F_{(1,25)} = 19.608, p = 0.0001$] overall accuracy being lower in patients (0.71) than in normal controls (0.87). Importantly, we found a significant interaction between emotion and group [$F_{(5,125)} = 4.085, p = 0.002$].

Post hoc comparisons (paired *t* tests) performed on the main effect of emotion showed that recognition of happiness was significantly easier than all other emotions ($p < 0.0001$), followed by surprise ($p < 0.001$ vs remaining emotions). No significant differences were detected in recognition of anger, sadness, or disgust ($p > 0.05$), whereas recognition of fear was significantly

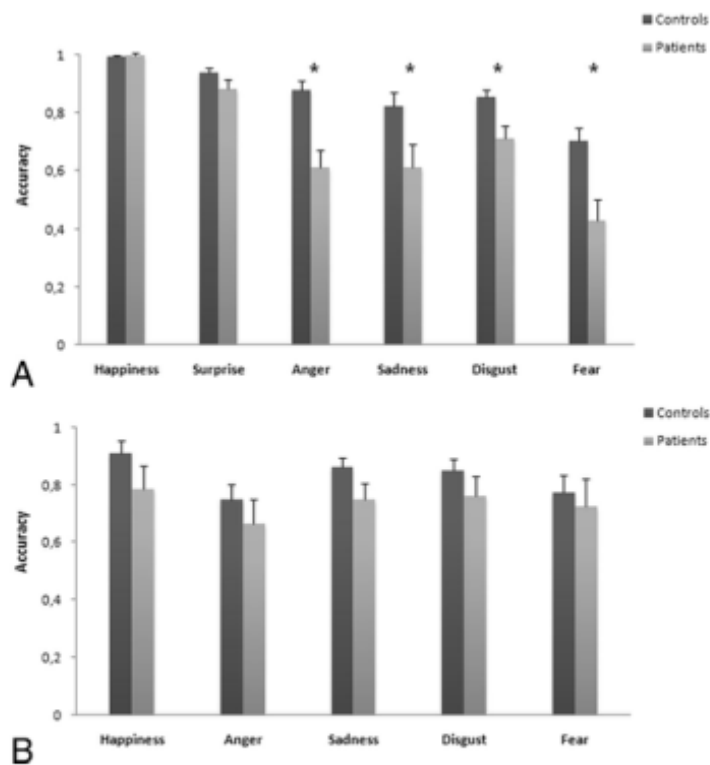


Figure 3. A, B, Mean accuracy (SEs) of controls and patients on explicit recognition of six facial expressions (A) and on judgments of emotionally evocative scenes (B). *Significant differences at $p < 0.05$.

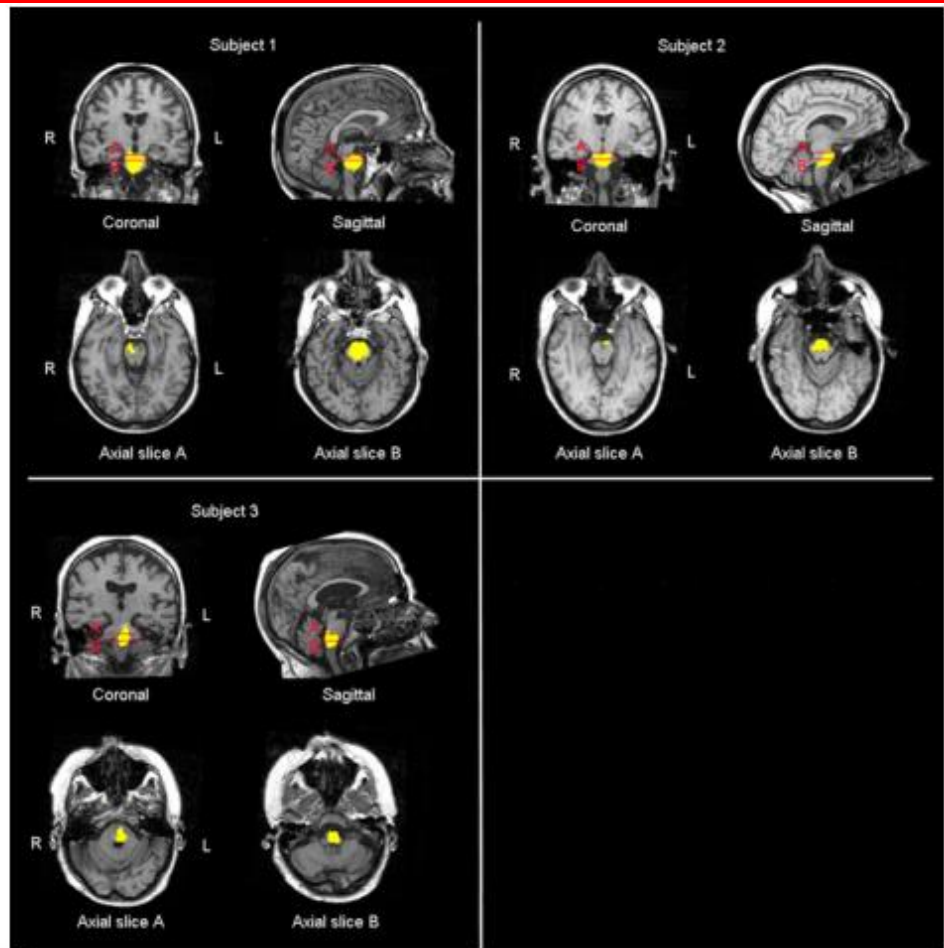
Ragion Pura VS Giudizio?

pictures of facial affect. Each model posed facial expressions corresponding to six basic emotions, i.e., happiness, sadness, anger, fear, disgust, and surprise; the complete image set included 60 stimuli (10 items \times 6 emotions).

For each stimulus, subjects were required to choose the expressed emotion among six labels (i.e., happiness, sadness, anger, fear, disgust and surprise), and then to rate emotion intensity on 1–9 Likert scale (1 = none, 5 = moderate, 9 = extreme).

Task 2: Judgment of emotionally evocative scenes. Stimuli consisted of complex pictures selected from the International Affective Picture System (IAPS) (Lang et al., 1997). Stimulus selection was based on results of a pilot study in which 80 university students assigned 200 IAPS scenes to one of six basic emotion labels (i.e., happiness, sadness, anger, fear, disgust, and surprise). In the present study, we only used images classified by at least 70% of normal subjects consistently; on this basis, we had to exclude stimuli intended to elicit surprise because no item of this category reached the defined consistency level. The resulting image set included 30 stimuli (6 items \times 5 emotions); happiness was represented by scenes involving babies or sporting events, sadness by cemeteries or funeral scenes, anger by guns or human violence scenes, fear by snakes or spiders, and disgust by rubbish or rats. Each stimulus was presented twice for a total of 60 items.

Subjects were required to evaluate each



Il Contributo degli uomini chiusi dentro

- Trascorso un periodo di circa 4/6 mesi dall'inizio della sindrome i pazienti si “trasformano”
- La collaborazione aumenta perché svaniscono le “sindromi nella sindrome”
- La SrQI è pari a quella riportata dalla popolazione generale!!!!!!

Hot From The Press

Contribution of interoceptive information to emotional processing: evidence from individuals with spinal cord injury

Journal:	<i>Journal of Neurotrauma</i>
Manuscript ID:	NEU-2015-3897.R1
Manuscript Type:	Regular Manuscript
Date Submitted by the Author:	14-May-2015
Complete List of Authors:	Pistoia, Francesca; University of L'Aquila, Neurological Institute, Department of Biotechnological and Applied Clinical Sciences Carolei, Antonio; University of L'Aquila, Neurological Institute, Department of Biotechnological and Applied Clinical Sciences Sacco, Simona; University of L'Aquila, Neurological Institute, Department of Biotechnological and Applied Clinical Sciences Conson, Massimiliano; Second University of Naples, Neuropsychology Laboratory, Department of Psychology Pistarini, Caterina; IRCCS Salvatore Maugeri Foundation, Neurorehabilitation Unit Cazzulani, Benedetta; IRCCS Salvatore Maugeri Foundation, Neurorehabilitation Unit Stewart, Elisabeth; University of Stirling, Psychology Division, School of Natural Sciences Franceschini, Marco; IRCCS San Raffaele Pisana, Department of Neurorehabilitation Sarà, Marco; IRCCS San Raffaele Pisana, Department of Neurorehabilitation

Serenità della mente pura in quanto mente pura?

- Abbiamo recentemente dimostrato che nei LIS le aree responsabili dell'embodiement vanno incontro ad una riduzione di volume e spessore...
- Sarebbero questi dati a spiegare la “dis – embodizzazione” ? = **non avere più bisogno del corpo per pensare?**

Pensare, Osservare e Capire (forse)

News

Non può parlare né muoversi, ma grazie alla riabilitazione riesce a iscriversi all'università: la storia della rinascita un uomo colpito dalla sindrome "locked in"

Ci si può riprendere da una sindrome che comporta la paralisi pressoché totale, e quindi una enorme difficoltà di comunicare con il mondo, al punto di riuscire ad iscriversi all'università?

La risposta sorprendente è sì, a patto che si sia assistiti da un'équipe specializzata e che si mantenga la capacità di desiderare ed immaginare.

Questa è la storia di un uomo - lo chiameremo Toni - colpito in seguito ad un incidente dalla sindrome 'locked-in', (letteralmente "chiuso dentro") che ha recuperato in modo sorprendente le proprie capacità relazionali e cognitive.

Riassumendo: ai confini della vita forse significa ai confini della mente per come la conosciamo?

“L'uomo ha tolto dal centro del sistema solare la terra, però ha messo se stesso, la sua mente, al centro dell'universo”

M Sarà 1993

Coma e Stato Vegetativo

Nonlinear Dynamics, Psychology, and Life Sciences, Vol. 14, No. 1, pp. 1-13.
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Complexity Loss in Physiological Time Series of Patients in a Vegetative State

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Abstract: Consciousness has not yet been satisfactorily defined because of its puzzling nature which involve the perception of the environment (perceptual awareness) and of the self (self-awareness). Current available methods fail in establishing prognosis in patients with vegetative state (VS): to our mind, this failure stems from the heterogeneous localization of brain damages causing VS and from available approaches tending to investigate self-awareness separately from perceptual awareness, whereas consciousness should be explored as a single and indivisible whole. Moving from the assumption that consciousness depends on the normal activity of wide neural networks, that may be regarded as complex systems whose outputs show a nonlinear behaviour, we propose a nonlinear approach applied to electroencephalographic (EEG) signal, aimed at exploring residual neural networks complexity in patients with VS. For this objective the EEG recording of 10 patients previously admitted to our department were retrospectively analyzed and compared with those of ten matched healthy control subjects. Approximate Entropy (ApEn) was calculated from the average values of time series with fixed input variables. Mean ApEn values were lower in patients then in controls ($t_{18}=12.3$, $p < 0.001$). ApEn is able to discriminate patients from controls thus supporting the hypothesis about a decreased neural networks complexity in VS.

Key Words: approximate entropy, vegetative state, nonlinear, complexity, coma

Loss of complexity

Heart rate non linear dynamics in patients with persistent vegetative state: A preliminary report

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Abstract

Primary objective: This study evaluated the hypothesis that neural networks derangement in patients with a vegetative state (VS) may cause an alteration of heart rate (HR) non-linear pattern.

Methods and procedures: Fifteen consecutive patients with a persistent VS and 15 matched healthy control subjects were included in the study. A 6-hour continuous electrocardiographic recording was used for the time series analysis measuring the occurrence time of the intervals between consecutive normal sinus heart beats (RR' intervals). Parameters evaluating linear and non-linear HR variability were studied. Approximate Entropy (ApEn), a non-linear parameter that quantifies the unpredictability of fluctuations in an instantaneous HR time series, was calculated from the average values of time series with fixed input variables.

Main outcomes and results: All linear parameters, with the only exception being the percentage of RR' intervals that were by at least 50 ms different from the previous interval (0.56, SD = 1.31 vs 10.35, SD = 12.58; $p = 0.005$) were similar in patients and in healthy control subjects. Mean ApEn values (0.68, SD = 0.24 vs 1.10, SD = 0.16; $p = 0.0001$) were lower in patients than in healthy control subjects.

Conclusions: The findings support the hypothesis that derangement of neural networks may cause a reduction of non-linear

Se riesco a spiegarvi questa...

4 *M. Sarà et al.*

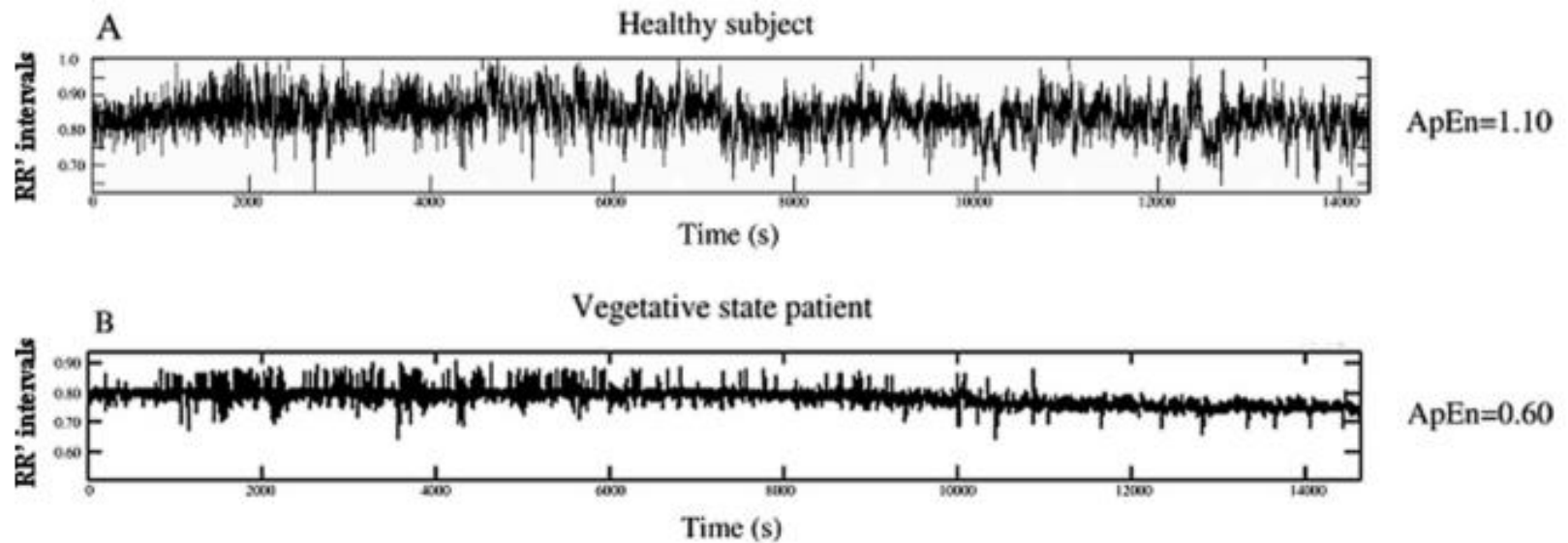



Figure 1. RR' time series in a patient and in the healthy matched control subject.

IL GRADO DI PERDITA DI COMPLESSITA' / NON LINEARITA' PREDICE L'OUTCOME

Functional Isolation Within the Cerebral Cortex in the Vegetative State: A Nonlinear Method to Predict Clinical Outcomes

Neurorehabilitation and
Neural Repair
XX(X) 1–8
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DOI: 10.1177/1545968310378508
<http://nnr.sagepub.com>


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Abstract

Background. Establishing prognosis in patients in a persistent vegetative state (VS) is still challenging. Neural networks underlying consciousness may be regarded as complex systems whose outputs show a degree of unpredictability experimentally quantifiable by means of nonlinear parameters such as approximate entropy (ApEn). **Objective.** The authors propose that the VS might be the result of derangement of the above neural networks, with an ensuing decrease in complexity and mutual interconnectivity: this might lead to a functional isolation within the cerebral cortex and to a reduction in the chaotic behavior of its outputs, with monotony taking the place of unpredictability. To test this hypothesis, the authors investigated whether nonlinear dynamics methods applied to electroencephalography (EEG) recordings may be able to predict outcomes. **Methods.** A total of 38 vegetative patients and 40 matched healthy controls were investigated. At admission, all patients were assessed by means of the Extended Glasgow Outcomes Coma Scale (E-GOS) and the Coma Recovery Scale–Revised (CRS-R). At the same time an EEG recording was performed and used for time series analysis and ApEn computation. Patients were clinically reassessed at 6 months from the first evaluation. **Results.** Mean ApEn values (0.73, standard deviation [SD] = 0.12 vs 0.97, SD = 0.02; $P < .001$) were lower in patients than in controls. Patients with the lowest ApEn values either died

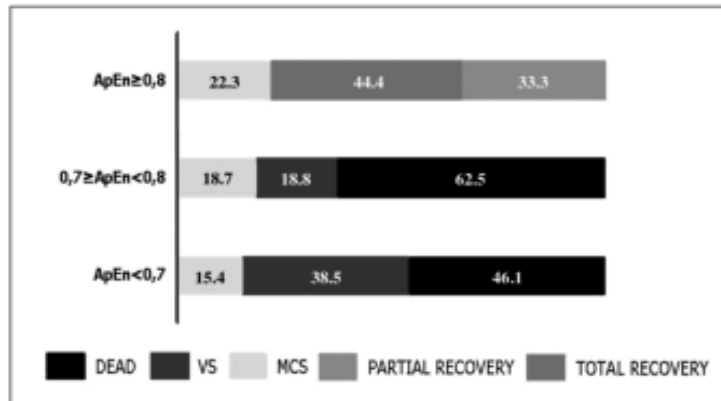


Figure 2. Clinical outcomes at 6 months follow-up evaluation (percentage of patients). Abbreviations: ApEn, approximate entropy; VS, vegetative state; MCS, minimally conscious state.

Discriminant Validity of ApEn

Logistic regression indicated that ApEn_mean, ApEn_min, and ApEn_max have a strong discriminative validity. Nagelkerke R^2 were 0.918, 0.875, and 0.939, respectively, indicating that the highest discriminative power was reached by ApEn_max. The odds ratio (OR) for ApEn_max was 2.11 (95% confidence interval [CI] = 1.38-3.23), indicating that for each 0.01 decrease, the odds of being patients versus controls increased more than twice. For ApEn_mean, OR was even higher (2.82), although less precise (larger 95% CI = 1.36-5.83). The OR for ApEn_min was 1.54 (95% CI = 1.08-

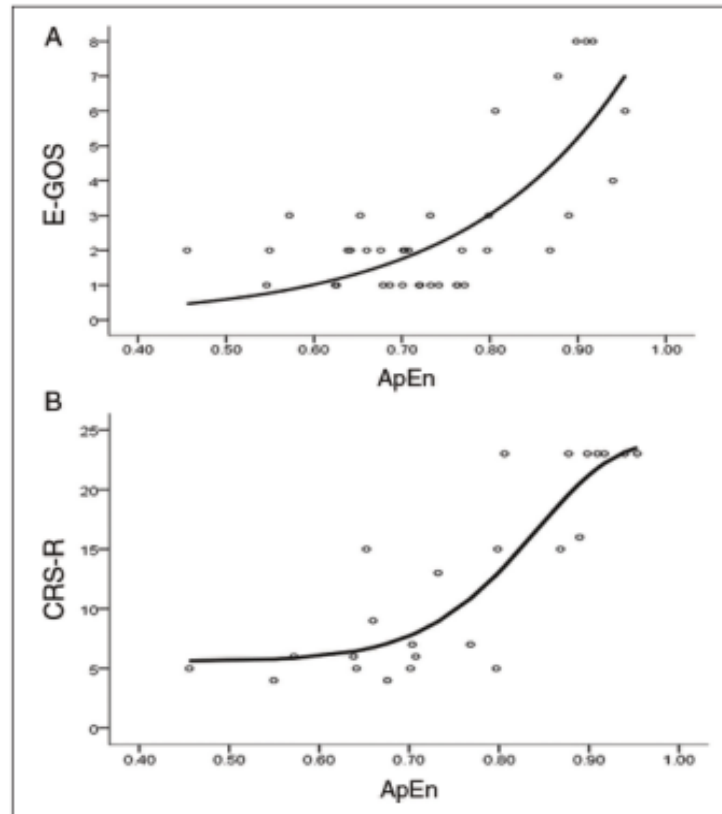


Figure 3. Relationship between ApEn values and E-GOS (A) and CRS-R scores (B) at the 6-month follow-up evaluation: the overall group (38 patients) was evaluated by means of the E-GOS, which also includes the death condition among outcomes (A). For patients who remained alive along the follow-up (34 patients), CRS-R

L'Entropia Approssimata “riconosce la coscienza”?

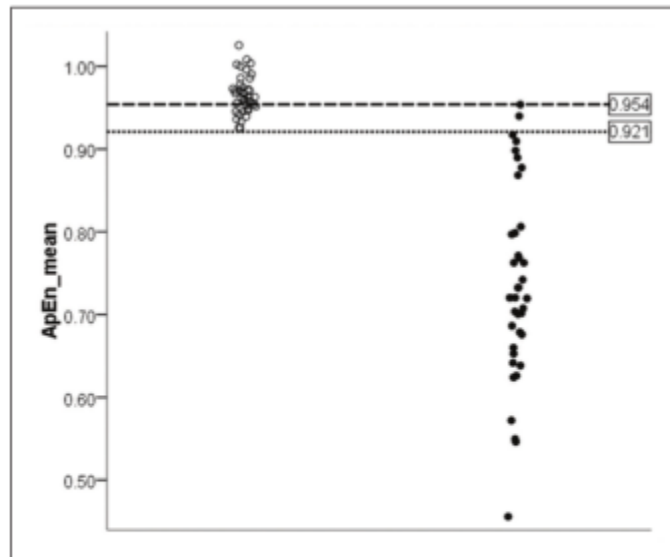


Figure 1. Individual values of ApEn_mean of healthy participants (open circles) and patients (closed circles): the cutoff of 0.921 (dotted line) is associated with a specificity of 100% and a sensitivity of 94.7%, whereas the cutoff of 0.954 (dashed line) is associated with a specificity of 70% and a sensitivity of 100%. Abbreviation: ApEn, approximate entropy.



NO!



Coscienza come ragion pura o giudizio?



SUDDENLY!



“Cosa mi è successo?”



DISCONTINUAZIONE

