



STRESSFUL LIFE EVENTS AND CONVERSION (FUNCTIONAL NEUROLOGICAL) SYMPTOMS

Prof Dr Med Selma Aybek





Hysteria


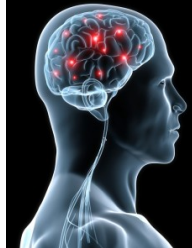


Hysteria

The wandering Womb



Psyche revived by Cupid's kiss

Uterus






Fig. 87. — Art de recueillir l'Empoisonnement.




Fig. 88. — Période de l'Épilepsie.




Fig. 91. — Période de l'Épilepsie.

An evolving Terminology

EDITORIAL

How "Psychogenic" Are Psychogenic Movement Disorders?

Jon Stone, PhD, FRCP¹

¹Department of Clinical Neuroscience, Institute of Psychiatry, London, United Kingdom

²Social Department for Motor Neuroscience and Movement Disorders, Institute of Neurology, UCL, London, United Kingdom

As the American Psychiatric Association committee begins formal work on DSM-5, we endorse brief editorials on issues that should be considered in its formulation.

EDITORIAL

Issues for DSM-5: Conversion Disorder

JON STONE, M.B., Ch.B., M.R.C.P., Ph.D.
 RIT LAFRANCE, Jr., M.D., M.P.H.
 JAMES L. LEVENSON, M.D.
 MICHAEL SHARPE, M.D.

VIEWPOINT

From Psychogenic Movement Disorder to Functional Movement Disorder: It's Time to Change the Name

Mark J. Edwards, PhD,¹ Jon Stone, PhD,² and Anthony E. Lang, MD³

¹Social Department of Motor Neuroscience and Movement Disorders, University College London (UCL)

²Institute of Neurology, UCL, London, United Kingdom

³Department of Clinical Neuroscience, Western General Hospital, Edinburgh, Scotland

⁴Motor and Gait Disorders Movement Disorders Centre and the Edward S. Ross Program in Parkinson's Disease, Toronto Western Hospital, Toronto, Ontario, Canada

From DSM-IV to DSM-5

Diagnostic Criteria for F44.x Conversion Disorder	Conversion Disorder (Functional Neurological Symptom Disorder)
<p>A. One or more symptoms or deficits affecting voluntary motor or sensory function that suggest a neurological or other general medical condition</p> <p>B. Psychosocial factors are judged to be associated with the symptom or deficit because the initiation or exacerbation of the symptom or deficit is preceded by conflicts or other stressors</p> <p>C. The symptom or deficit is not intentionally produced or feigned.</p> <p>D. The symptom or deficit cannot, after appropriate investigation, be fully explained by a known general medical condition or the direct effects of a substance, or as a culturally sanctioned behavior or experience.</p> <p>E. The symptom or deficit causes clinically significant distress or impairment in functioning, or warrants medical evaluation.</p> <p>F. The symptom or deficit is not limited to pain or sexual dysfunction, does not occur during the course of Somatization Disorder, and is not better accounted for by another medical disorder.</p> <p>Specify:</p> <ul style="list-style-type: none"> 1 with Motor symptoms or deficit 2 with Sensory symptoms or deficit 3 with Seizures or Convulsions 4 with Mixed Symptoms 	<p>A. One or more symptoms of almost voluntary motor or sensory function.</p> <p>B. Clinical findings provide evidence of incompatibility between the symptom and recognized neurological or medical conditions.</p> <p>The symptoms or deficits are not intentionally produced.</p> <p>D. The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning, or warrants medical evaluation.</p> <p>Coding note: The ICD-9-CM code for conversion disorder is 300.11, which is assigned regardless of the symptom type. The ICD-10-CM code depends on the symptom type (see below).</p> <p>Specify symptom type:</p> <ul style="list-style-type: none"> (F44.4) With weakness or paralysis (F44.4) With abnormal movement (e.g., tremor, dystonic movement, myoclonus, gait disorder) (F44.4) With swallowing symptoms (F44.4) With speech symptoms (e.g., dysphonia, slurred speech) (F44.5) With attacks or seizures (F44.6) With anesthesia or sensory loss (F44.6) With special sensory symptom (e.g., visual, olfactory, or hearing disturbance) (F44.7) With mixed symptoms

Positive Signs: Arc de Cercle



Research in FND



Research in FND

Psychogenic



Psychogenic

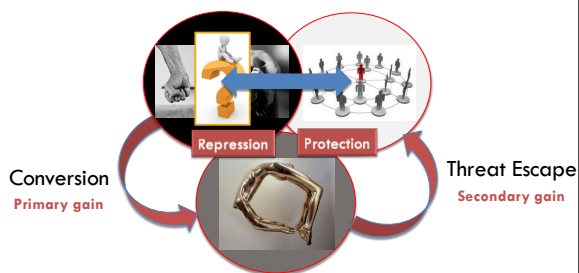


Early life experiences

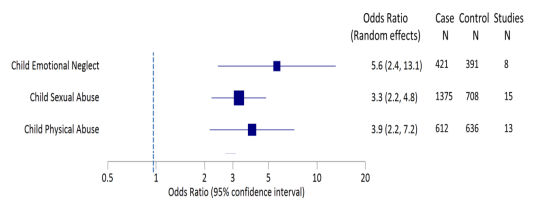


Adverse life events

Theoretical Model



Early life experiences



Ludwig al. Lancet Psychiatry 2018

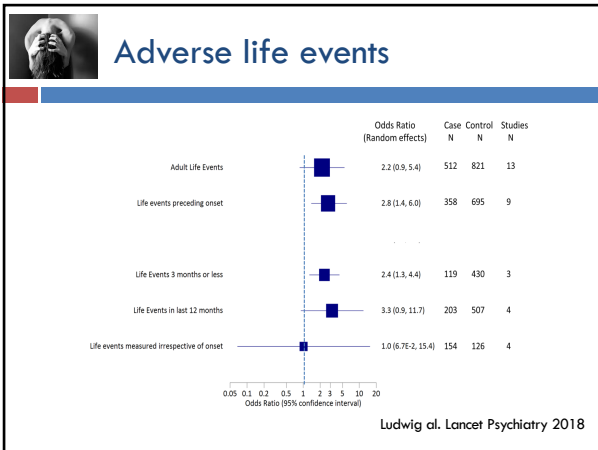


Table 3: Proportion of cases with no exposure to specific stressors when compared with controls

Stressor Category	Cases	Healthy controls	Neurological disorder or psychiatric disorder controls
No severe life event (assessed by LEDS)			
Baker and colleagues (2012)*	26%	86%	78%
House and colleagues (1988)*	25%	75%	-
Nicholson and colleagues (2016)*	15%	84%	25%
No stressful life events or maltreatment (assessed by clinical interview)			
Arnold and colleagues (1996)*	14%	-	67%
Kuczkowska and colleagues (2013)*	25%	88%	-
Schöls and colleagues (2013)**	51%	75%	-
No stressful life events or maltreatment (rate of no exposure described only in cases)			
Billy and colleagues (2009)*	6%	-	-
Rockliff and colleagues (2002)*	15%	-	-
No exposure to maltreatment (including emotional neglect)			
Kuyk and colleagues (1999)*	56%	-	75%
Mohdhey and colleagues (2002)*	70%	-	82%
(2002)*	-	-	-
No exposure to physical or sexual abuse			
Alper and colleagues (1993)*	68%	91%	-
Obit and colleagues (2003)*	56%	-	59%
Tajak and colleagues (2000)*	56%	-	67%

Ludwig al. Lancet Psychiatry 2018

Repression unwanted memories

nature 2001

Suppressing unwanted memories by executive control

Michael C. Anderson & Collin Green
 Department of Psychology, University of Oregon, Eugene, Oregon 97403-1227, USA

ENCODING

Car - Rabbit

House - Fire

Repression unwanted memories

nature 2001

Suppressing unwanted memories by executive control

Michael C. Anderson & Collin Green
 Department of Psychology, University of Oregon, Eugene, Oregon 97403-1227, USA

ENCODING

Car - Rabbit

House - Fire

THINK NO THINK

Car -

House - Fire

SUPPRESSION

RECALL

Car - Rabbit

House - Fire

Repression unwanted memories

nature 2001

Suppressing unwanted memories by executive control

Michael C. Anderson & Collin Green

Science AAAS

Neural Systems Underlying the Suppression of Unwanted Memories
 Michael C. Anderson, et al.
 Science 303, 232 (2004).
 DOI: 10.1126/science.1089504

DLPFC and hippocampus

Repression unwanted memories

Original Investigation JAMA Psychiatry 2014

Neural Correlates of Recall of Life Events in Conversion Disorder

Selma Aybek, MD, Timothy R. Nicholson, MD, PhD, Fernando Zelaya, PhD, Owen G. O'Daly, PhD, Tom J. Craig, MD, PhD, Anthony S. David, MD, Richard A. Kanaan, MD, PhD

Life event and Difficulties Schedule (LEDS)

- 'Psychological Stressor'
 - Severe + Secondary gain
- 'Control Stressor'
 - Severe + No secondary gain

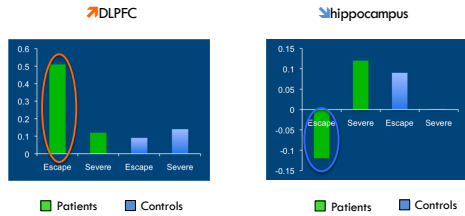
ESCAPE event

SEVERE event

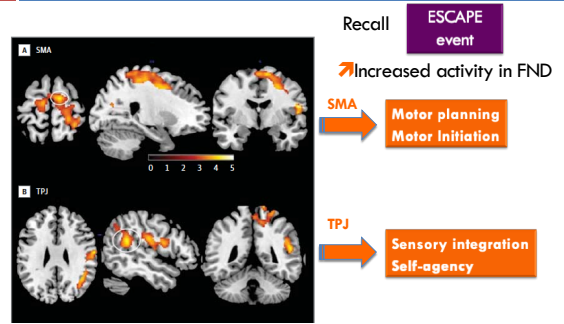
Repression unwanted memories

Original Investigation JAMA Psychiatry 2014
Neural Correlates of Recall of Life Events in Conversion Disorder

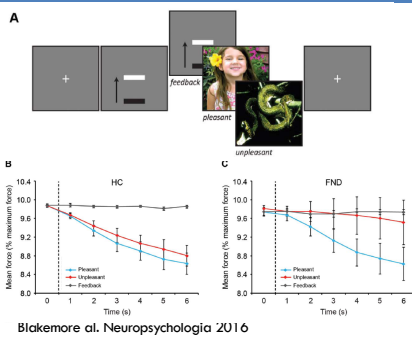
Selma Aybek, MD, Timothy R. Nicholson, MD, PhD, Fernando Zelaya, PhD, Owen G. O'Daly, PhD, Tom J. Craig, MD, PhD, Anthony S. David, MD, Richard A. Kanaan, MD, PhD



Limbic-motor interaction



Motor response to Threat in mFND

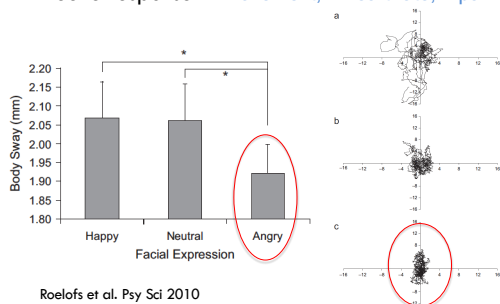


Threat processing



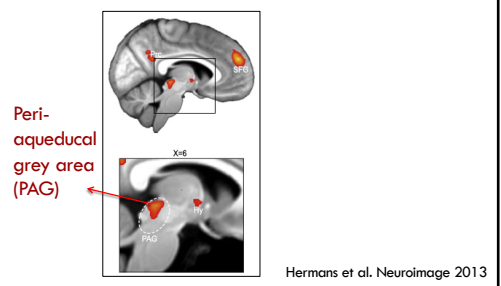
Automatic Defense Behavior

Freeze response: ↓movement, ↓heart rate, ↓pain

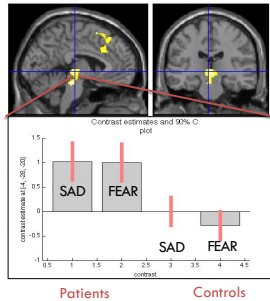


Automatic Defense Behavior

Freeze response: ↓movement, ↓heart rate, ↓pain

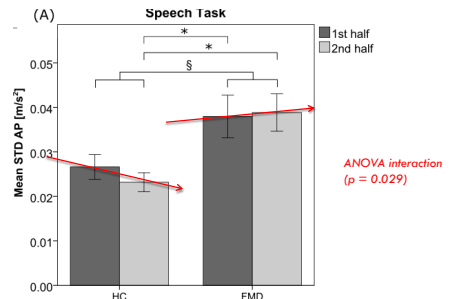


Freeze and FND



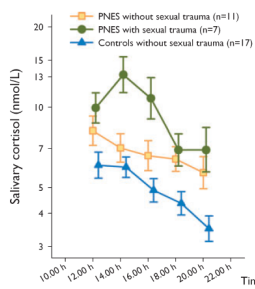
Aybek et al. PlosOne 2015

Freeze in FND



Zito et al. Under review

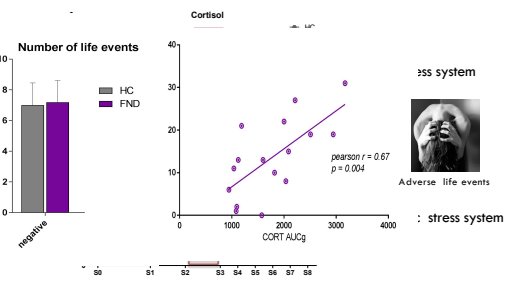
Biological Stress in NES



Early life experiences

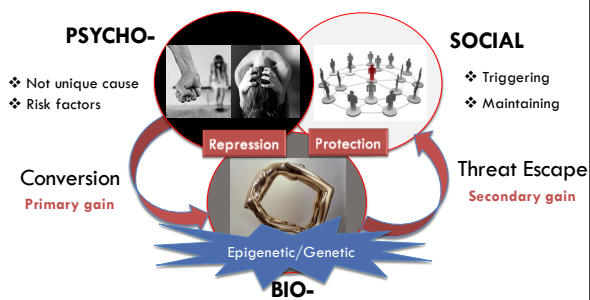
Bakvis. Epilepsia 2010

Biological Stress in mFND



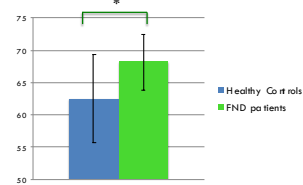
Apazoglou & Aybek. Psychoneuroendocrinology 2017

Theoretical Model



Epigenetic Factors

□ Methylation of Oxytocin receptor (%)



Apazoglou & Aybek. JNNP 2018

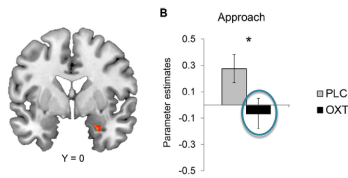
Potential Future Treatments

Oxytocin reduces amygdala responses during threat approach

Sina Radke^{a,d,*}, Inge Volman^{a,b,e}, Idil Kokal^a, Karin Roelofs^{a,b,1}, Ellen R.A. de Bruijn^{c,1}, Ivan Toni^{a,1}

Psychoneuroendocrinology 79 (2017) 160–166

- Oxytocin nasal spray / Placebo
- Double-blind
- fMRI, Happy-Angry faces, approach-avoid task



Conclusion

Limbic-motor-sensory interaction?

Defense Behaviour?



Early life exp (neglect)
Life events

Stress dysregulation
Amygdalar hyperarousal
Epigenetic? Genetic?

Thank you!



Claudio Bassetti
Mathias Sturzenegger
Niklaus Egloff
Anita Barbey
Rike Barth
Irena Pjanic
Doris Malpeli



Giuseppe Zito
Samantha Weber
Salomé Pia Heim
Daniel Bauman



Rebekah Blakemore
Kallia Apazoglu
Jennifer Wegzyrk
Valeria Kebets
Alexandre Dayer
Dimitri Van de Ville



Francois Vingerhoets
Alexandre Berney
Corinna Daum
Manica Hubschmid



Pierre Pollak
Silvio Galli
Ninon Horie



Kamilar Aminian
Anisoara Ionescu



Anthony David
Richard Kanacan
Tim Nicholson
Fernando Zelaya
Owen O'Daly