

# Carles Escera

*Curriculum vitae*

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## Personal background & contact information

Carles Escera

Born in Barcelona, 03/FEB/1963

Department of Psychiatry and Clinical Psychobiology  
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## Education

1993 Ph.D. in Psychology, University of Barcelona  
1987 Degree in Psychology, University of Barcelona

## Accreditation

2009 Acreditación Nacional para el acceso al Cuerpo de Catedráticos de Universidad (Acreditación ANECA – Programa Academia)  
2004 Acreditació de Recerca Avançada, Agència de la Qualitat Universitària (AQU), Generalitat de Catalunya

## Current positions

1997 to present *Professor Titular d'Universitat*, University of Barcelona  
  
2009 to present Director – *Institute for Brain, Cognition and Behavior (IR3C)* of the University of Barcelona  
2009 to present Coordinator – *Spanish Network on Cognitive Neuroscience* of the Spanish Ministry of Science and Innovation (PSI2008-00968-E).  
2005 to present Director – *EEG and Evoked Potentials Laboratory*, Faculty of Psychology, University of Barcelona  
2003 to present Group leader – *Cognitive Neuroscience Research Group*, Excellence Group of the Generalitat de Catalunya (SGR2005-000953, SGR2009-11).

## Past positions

1993-1997 *Professor Titular Interí*, University of Barcelona  
1988-1993 *Professor Associat*, University of Barcelona  
  
2000-2006 Treasurer – *Federation of European Psychophysiology Societies (FEPS)*  
2001-2004 President – *Sociedad Española de Psicofisiología (SEPF)*  
1999-2001 President-Elect – *Sociedad Española de Psicofisiología (SEPF)*

## Visiting positions

2004-2005 Fellow, *Hanse Institute for Advance Study* (Delmenhorst, Germany)  
2004-2005 Visiting Professor, *Department of Neuropsychology and Behavioral Neurology*, Bremen University (Germany)  
1999-1999 Senior researcher, *Cognitive Brain Research Unit (CBRU)*, Department of Psychology, University of Helsinki (Finland)

## Academic committees

- 2009 to present Board member, *Institute for Brain, Cognition and Behavior (IR3C)* of the University of Barcelona
- 2006 to present Board member, Senate of University of Barcelona
- 2005 to present Board member, Research Board, Faculty of Psychology, University of Barcelona
- 2005-2005 Board member, R+D National Plan, Spanish Ministry of Education and Science
- 2004 to present Board member, PhD Board, Faculty of Psychology, University of Barcelona
- 2004-2008 Board member, Faculty of Psychology, University of Barcelona
- 1996-1998 Board member, Health Sciences Division, General Library, University of Barcelona
- 1992 to present Board member, Department of Psychiatry and Clinical Psychobiology
- 1991-1993 Board member, Faculty of Psychology, University of Barcelona

## Other academic affiliations

- Foundational member of *Sociedad Española de Psicofisiología (SEPF)*, 1994
- Society for Psychophysiological Research (SPR), since 1994
- Cognitive Neuroscience Society (CNS), since 1995
- International Organization of Psychophysiology (IOP), since 2001
- Society for Neuroscience (SfN), since 2001

## Editorial service

- 2007 Guest Editor, *Special issue on the Mismatch Negativity*, *Journal of Psychophysiology*
- 2006 to present Editorial Board, *Neuropsychological Trends*
- 2002 to present Associate Editor, *Journal of Psychophysiology*
- 2000 to present Editorial Board, *Journal of Psychophysiology*

Journal review: *Annals of Neurology* – *Audiology and Neuro-Otology* – *Behavioral Research Methods* – *Biological Psychiatry* – *Biological Psychology* – *Brain Research* – *Brain Research Reviews* – *Clinical Neurophysiology* – *Cognitive, Affective and Behavioral Neuroscience* – *Cognitive Brain Research* – *Developmental Neuropsychology* – *Electroencephalography and Clinical Neurophysiology* – *European Journal of Neuroscience* – *International Journal of Psychology* – *International Journal of Psychophysiology* – *Journal of Cognitive Neuroscience* – *Journal of Psychiatry and Neuroscience* – *Journal of Psychophysiology* – *Neurobiology of Aging* – *Neuroimage* – *Neuropsychologia* – *NeuroReport* – *Neuroscience Letters* – *Perceptual and Motor Skills* – *Psychological Reports* – *Psychophysiology* – *Scandinavian Journal of Psychology* – *Science Asia* – *Spanish Journal of Psychology*.

## Project/career peer review

- 2009 Medical Research Council (Cambridge, UK)
- 2009 AGAUR – Agència de Gestió d'Ajuts Universitaris i de Recerca, Generalitat de Catalunya
- 2008 to present AQU – Agència per a la Qualitat del Sistema Universitari de Catalunya
- 2007 Children's Research Center of Michigan (CRCM) (Michigan, USA).
- 2006 *The ANT Young Scientist Award* (Enschede, The Netherlands)
- 2006 Biotechnology and Biological Sciences Research Council (UK)
- 2005 to present European Science Foundation (Strasbourg, France)
- 2002 Community Fund, London (UK)
- 2002 European Commission: V Framework Programme: Accompanying Measures
- 2001 European Commission: V Framework Programme: Quality of Life: Neurosciences
- 2001 European Commission: V Framework Programme: Accompanying Measures
- 1996 to present Agencia Nacional de Evaluación (ANEP), Spanish Ministry of Science and Education

## Grants

- European Commission, VII Framework Programme, Coordination Action, ERA-NET NEURON (NEURON-75-045). *Probing the Auditory Novelty System* (role: Coordinator), 2010-2012
- Spanish Ministry of Science and Innovation, Plan Nacional de I+D+i 2008-2011 (PSI2009-08063). *Ultrafast auditory novelty detection in the human brain*, 2010-2012
- Catalan Government (AGAUR), Grups de Recerca Consolidats (SGR2009-11). *Grup de Recerca en Neurociència Cognitiva*, 2009-2013
- Spanish Ministry of Science and Innovation, Programa de Acciones Complementarias (PSI2008-00968-E/PSIC). *Red de Neurociencia Cognitiva*, 2009-2011
- Spanish Ministry of Science and Innovation, Acciones Integradas con Alemania (HA2008-0010). *The role of predictive models in auditory perception and attention*, with Leipzig Universität, 2009-2010
- Spanish Ministry of Science and Education, Programa Consolider-Ingenio 2010 (CDS2007-00012). *Bilingualism and Cognitive Neuroscience Cognitiva* (role: Leader of the Group “Cognitive Neuroscience of Attention and Auditory Perception”), 2007-2012
- Spanish Ministry of Science and Technology, Plan Nacional de I+D 2004-2007 (SEJ2006-000496/PSIC). *Cognitive set effects on brain responses to novelty: an integrated ERP and fMRI investigation*, 2007-2009
- Spanish Ministry of Education and Science, Acciones Integradas con Alemania (HA2005-0024). *The cognitive neuroscience of involuntary attention: A combined ERP and fMRI investigation*, with Bremen Universität, 2006-2007
- Spanish Ministry of Science and Technology, Plan Nacional de I+D 2000-2003 (BSO2003-002440). *Cerebral mechanisms of the exogenous control of attention*, 2003-2006
- Catalan Government (DURSI), Thematic Network (XT2003-00084). *Cognitive event-related brain potentials in clinical neurophysiology*, 2003-2005
- Catalan Government (DURSI), Thematic Network (XT2001-00036). *Cognitive event-related brain potentials in clinical neurophysiology*, 2001-2003
- Spanish Ministry of Education and Science, Acciones Integradas con Alemania (HA2000-0022). *Cerebral mechanisms of involuntary orienting of attention*, with Leipzig Universität, 2001-2002
- Catalan Government (DGR), Accions Especials (2000ACES-0074). *Toward the understanding of human auditory function*, 2001
- Spanish Ministry of Science and Technology, Acciones Especiales (AE00-0358). *Toward the understanding of human auditory function*, 2001
- Spanish Ministry of Education and Science, Plan Nacional de I+D (PM99-0167). *Attention-deficit hyperactivity disorder: neuroelectric characterization of attentional dysfunctions*, 2000-2002
- European Commission, V Framework Programme: Human Potential Programme: High-Level Scientific Conferences (HPCF-CT1999-00187). *II International Congress on Mismatch Negativity and its Clinical Applications* (role: Coordinator), 2000
- European Commission, IV Framework Programme: Training and Mobility of Researchers (Marie Curie) (BMH4-98-5118). *Cerebral networks of involuntary attention revealed by combined ERP/MEG and fMRI brain imaging*, 1999
- Spanish Ministry of Education and Science (UE96-0038). *Electrophysiological assessment of normal and pathological cognitive brain function*, 1997-1998
- Catalan Government (DGR), Accions Especials (ACES98-65/8). *PROBRAIN: a non-invasive test of cognitive brain dysfunction*, 1999
- Spanish Ministry of Education and Science, Acciones Especiales (SAF98-1822-E). *PROBRAIN: a non-invasive test of cognitive brain dysfunction*, 1999
- European Commission, IV Framework Programme, BIOMED-2 (BMH4-CT96-0819). *Objective evaluation of brain function and dysfunction (COBRAIN)*, 1996-1998

Spanish Ministry of Education and Science, Plan Nacional I+D (PB93-0802). *Sensory memory and attention: Neuroelectric localisation of related cerebral mechanisms*, 1994-1996

### **Awards**

Premio a la investigación en el ámbito de la infancia, Fundació Agrupació Mútua (Barcelona), 2000

Spanish Ministry of Education and Science, Programa I3, Award for Intensification of Research Activities (Ayuda para la Intensificación de la Actividad Investigadora), 2008-2010

### **Ph.D. thesis**

*Ultradian rhythms in human brain function during wakefulness: event-related brain potentials and behaviour*, University of Barcelona (supervisor: Dr. Carles Grau), 1988-1993

### **Post-doctoral training**

Fellow and visiting researcher at the *Cognitive Brain Research Unit* (CBRU), Department of Psychology, University of Helsinki. Training in the cognitive electrophysiology and the cognitive neuroscience of involuntary attention, (supervision: Prof. Risto Näätänen and Prof. Kimmo Alho; 13 months altogether between 1993 and 1999)

### **Ph.D. supervision**

Manuel Garcia-Garcia. *The role of COMT, DAT and DRD2 polymorphisms on brain mechanisms of involuntary attention and cognitive control*. University of Barcelona (European Doctorate Mention). 2006-2009

Iria San Miguel. *Working memory influences on auditory novelty processing in the human brain*. University of Barcelona (European Doctorate Mention). 2005-2008

Judith Domínguez. *Gating of auditory novelty processing by emotional context*. University of Barcelona (European Doctorate Mention). 2004-2008

Maria José Corral. *Electrophysiological indexes of the detection and processing of auditory distractors*. University of Barcelona (European Doctorate Mention). 2001-2008

Vanessa Carral. *Electrophysiology of abstract auditory processing in human adults and newborns*. University of Barcelona (European Doctorate Mention). 2002-2007

Sílvia Corbera. *A neurophysiological investigation of high-order auditory processing in developmental stuttering and dyslexia*. University of Barcelona. 2002-2006

Elena Yago Soto. *Cerebral networks of involuntary attention: a behavioural and electrophysiological study*. University of Barcelona. 1997-2002

Rosa Díaz Hurtado. *Psychophysiological markers in children at high risk for alcoholism*. University of Barcelona. 1993-2000

Ma. Dolores Polo Guillén. *Attention mechanisms and auditory sensory memory in chronic alcoholics: Mismatch Negativity (MMN) and P300*. University of Barcelona. 1993-1999

### **Invited lectures and keynote speeches**

*The auditory novelty system [mecanismos cerebrales del control exógeno de la atención]*  
Universitat de València, 2009

*Perfiles biomagnéticos de la atención*  
Hospital Universitario Ramón y Cajal, Madrid (Spain), 2009

*El cervell: La màquina de pensar i sentir*  
Citilab Cornellà, Cornellà de Llobregat (Barcelona, Spain) – L'Herència de Darwin, 2009

*The Catalan Connection*

University of Helsinki (Finlandia) – Risto Näätänen's portrait unveiling ceremony, 2008

*Contextual modulation of involuntary attention: behavioral, electrophysiological and haemodynamic evidence*  
Department of Psychology, Universität München (Alemania), 2007

*Distraction and the brain*

Center for Cognitive Neuroscience, University of Bangor (Wales, UK), 2006

*Bases neurobiológicas de la disfemia verbal*

Universidade de A Coruña (Spain), 2006

*Top-down modulation of auditory stimulus-driven involuntary attention*

Institut für Psychologie I, Universität Leipzig (Germany), 2005

*Functional neuroimaging of working memory/involuntary attention interactions*

Center for Advanced Imaging, Universität Bremen (Germany), 2005

*An event-related brain potential investigation of top-down/bottom-up interactions in involuntary attention*

School of Psychology, University of Plymouth (UK), 2005.

*Pay attention to me and ignore the background sound, if you are able to...*

Universität Oldenburg (Germany), 2005

*Attention please, or the speaker's fight against listeners distraction*

Hanse Institute for Advanced Study, Delmenhorst (Germany), 2004

*Attention, sounds, and distracters... and the brain in between*

Institut für Experimentelle Psychologie, Universität Regensburg (Germany), 2004

*Evaluación de la función cognitiva mediante potenciales evocados*

Magíster en Neuropsicología, Universidad Complutense de Madrid, 2004

*Per què ens distreuen més els estímuls significatius?: Una explicació des de la Neurociència Cognitiva*

Facultad de Psicología, Universitat de Girona (Spain), 2004

*Organización funcional del sistema auditivo: La detección de la novedad como principio fundamental*

Departamento de Psicología, Universitat de les Illes Balears (Spain), 2004

*Funciones cognitivas del sistema auditivo: estudio en humanos con potenciales evocados*

Instituto de Neurociencias de Castilla y León (INCYL), Universidad de Salamanca (Spain), 2003

*Electrophysiological investigation of neurocognitive deficits in chronic alcoholism*

Department of Neuropsychiatry, University of Hirosaki (Japan), 2001

*Behavioral and electromagnetic studies of involuntary attention*

Cognitive Brain Research Unit, Department of Psychology, University of Helsinki (Finland), 1999

## Conference organization

### President of Organizing/Scientific Committee

IV Congreso Español de Psicofisiología, Sevilla (Spain), 2004

III Congreso Español de Psicofisiología, Santiago de Compostela (Spain), 2002

II International Congress on Mismatch Negativity and its Clinical Applications, Barcelona (Spain), 2000

I International Workshop on Mismatch Negativity and its Clinical Applications, Helsinki (Finland), 1998

### Member of Scientific/Program Committee

Fifth Conference on Mismatch Negativity (MMN) and its Clinical and Scientific Applications, Budapest (Hungary), 2009

14th World Congress of Psychophysiology (IOP), Saint Petersburg (Russia), 2008

13th World Congress of Psychophysiology (IOP), Istanbul (Turkey), 2006

VI Congress of the Federation of European Psychophysiology Societies (FEPS6), Budapest (Hungary), 2006

4th international Conference on MMN and its Clinical and Scientific Applications, Cambridge (UK), 2006

12th World Congress of Psychophysiology (IOP), Tessaoniki (Greece), 2004

EPIC XIV: Evoked Potential International Conference, Leipzig (Germany), 2004

V Congress of the Federation of European Psychophysiology Societies (FEPS5), Burdeaux (France), 2003

III International Workshop on MMN and Auditory Function and Dysfunction (MMN03), Lyon (France), 2003

11th World Congress of Psychophysiology (IOP), Montreal (Canada), 2002

II International Congress on Mismatch Negativity and its Clinical Applications, Barcelona (Spain), 2000

39 Annual Meeting of the Society for Psychophysiological Research (SPR), Granada (Spain), 1999

## Publications

### *Peer-reviewed journals*

1. Garcia-Garcia, M., Yordanova, J., Kolev, V., Domínguez-Borràs, J., & Escera, C. (2010). Tuning the brain for novelty detection under emotional threat: The role of increasing gamma phase-synchronization. *Neuroimage*, 49, 1038-1044.
2. SanMiguel, I., Linden, D., & Escera, C. (2009). Attention capture by novel sounds: Distraction versus facilitation. *European Journal of Cognitive Psychology*, in press.
3. Fuentemilla, L., Marco-Pallarés, J., Gual, A., Escera, C., Polo, M.D., & Grau, C. (2009). Impaired theta phase-resetting underlying auditory N1 suppression in chronic alcoholism. *Neuroreport*, 20, 337-342.
4. Domínguez-Borràs, J., Trautmann, S., Erhard, P., Fehr, T., Herrmann, M., & Escera, C. (2009). Emotional context enhances auditory novelty processing in superior temporal gyrus. *Cerebral Cortex*, 19, 1521-1529.
5. Díaz, B., Baus, C., Escera, C., Costa, A., & Sebastián-Gallés, N. (2008). Brain potentials reveal the origin of individual differences in learning the sounds of a second language. *Proceedings of the National Academy of Sciences*, 105, 16083-16088.
6. Domínguez-Borràs, J., Garcia-Garcia, M., & Escera, C. (2008). Emotional context enhances auditory novelty processing: behavioural and electrophysiological evidence. *European Journal of Neuroscience*, 28, 1199-1206.
7. Garcia-Garcia, M., Domínguez-Borràs, J., SanMiguel, I., Escera, C. (2008). Electrophysiological and behavioral evidence of gender differences in the modulation of distraction by the emotional context. *Biological Psychology*, 79, 307-316.
8. Corral, M.J. & Escera, C. (2008). Effects of sound location on visual task performance and electrophysiological measures of distraction. *Neuroreport*, 19, 1535-1539.
9. Cortiñas, M., Corral, M.J., Garrido, G., Garolera, M., Pajares, M., & Escera, C. (2008). Reduced novelty-P3 associated with increased behavioral distractibility in schizophrenia. *Biological Psychology*, 78, 253-260.
10. SanMiguel, I., Corral, M.J. & Escera, C. (2008). When loading working memory reduces distraction: Behavioral and electrophysiological evidence from an auditory-visual distraction paradigm. *Journal of Cognitive Neuroscience*, 20(7), 1131-1145.
11. Domínguez-Borràs, J., Garcia-Garcia, M. & Escera, C. (2008). Negative emotional context enhances auditory novelty processing. *Neuroreport*, 19, 503-507.
12. Parmentier, F., Elford, G., Escera, C., Andrés, P. & SanMiguel, I. (2008). The cognitive locus of auditory distraction by acoustic novelty in the cross-modal oddball task. *Cognition*, 106, 402-432.
13. Vázquez-Marrufo, M., González-Rosa, J.J., Vaquero, E., Duque, P., Escera, C., Borges, M., Izquierdo, G., & Gómez, C.M. (2008). Abnormal ERPs and high frequency bands power in multiple sclerosis. *International Journal of Neuroscience*, 118, 27-38.
14. Escera, C. & Corral, M.J. (2007). Role of mismatch negativity and novelty-P3 in involuntary auditory attention. *Journal of Psychophysiology*, 21, 251-264.
15. Escera, C. (2007). The mismatch negativity (MMN) thirty years later: How far have we come? *Journal of Psychophysiology*, 21, 129-132.
16. Tubau, E., Escera, C., Carral, V. & Corral, M.J. (2007). Individual differences in sequence learning: The role of auditory pattern sensitivity as revealed with evoked potentials. *European Journal of Neuroscience*, 26, 261-264.
17. Marco, J., Ruffini, G., Polo, M.D., Gual, A., Escera, C. & Grau, C. (2007). Mismatch negativity impairment associated with alcohol consumption in chronic alcoholics: A scalp current density study. *International Journal of Psychophysiology*, 65, 51-57.
18. Nuñez-Peña, M.I. & Escera, C. (2007). Effects of rule violation on arithmetical sequence processing. *International Journal of Psychophysiology*, 64, 165-173.

19. Barceló, F., Escera, C., Corral, M.J. & Periañez, J.A. (2006). Task switching and novelty processing activate a common neural network for cognitive control. *Journal of Cognitive Neuroscience*, 18, 17324-1738.
20. Andrés, P., Parmentier, F.B.R. & Escera, C. (2006). The effect of age on the involuntary capture of attention by irrelevant sounds: a test of the frontal hypothesis of aging. *Neuropsychologia*, 44, 2564-2568.
21. Corbera, S., Escera, C. & Artigas, J. (2006). Impaired duration mismatch negativity in developmental dyslexia. *NeuroReport*, 17, 1051-1055.
22. Nuñez-Peña, M.I., Cortiñas, M. & Escera, C. (2006). Problem size effect and processing strategies in mental arithmetics. *Neuroreport*, 17, 357-360.
23. Corbera, S., Corral, M.J., Escera, C., Idiazábal, M.A. (2005). Abnormal speech sound representation in developmental stuttering. *Neurology*, 65, 1246-1252.
24. Carral, V., Huotilainen, M., Rusuuvirta, T., Fellman, V., Näätänen, R. & Escera, C. (2005). A kind of auditory “primitive” intelligence already present at birth. *European Journal of Neuroscience*, 21, 3201-3204.
25. Nuñez-Peña, M.I., Aznar, J.A., Linares, D., Corral, M.J. & Escera, C. (2005). Effects of dynamic rotation on event-related brain potentials. *Cognitive Brain Research*, 24, 307-316.
26. Carral, V., Corral, M.J. & Escera, C. (2005). Auditory event-related potentials as a function of abstract change magnitude. *Neuroreport*, 16, 301-305.
27. Gumenyuk, V., Korzyukov, O., Escera, C., Hämäläinen, M., Huotilainen, M., Häyrynen, T., Oksanen, H., Näätänen, R., von Wendt, L. & Alho, K. (2005). Electrophysiological evidence of enhanced distractibility in ADHD children. *Neuroscience Letters*, 374, 212-217.
28. Nuñez-Peña, M.I., Honrubia, M.L. & Escera, C. (2005). Problem size effect in additions and subtractions: An ERP study. *Neuroscience Letters*, 373, 21-25.
29. Gumenyuk, V., Korzyukov, O., Alho, K., Escera, C. & Näätänen, R. (2004). Effects of auditory distraction on electrophysiological brain activity and performance in children aged 8–14 years. *Psychophysiology*, 41, 30-36.
30. Escera, C., Yago, E., Corral, M.J., Corbera, S. & Nuñez, M.I. (2003). Attention capture by auditory significant stimuli: semantic analysis follows attention switching. *European Journal of Neuroscience*, 18, 2408-2412.
31. Yago, E., Escera, C., Alho, K., Giard, M.H. & Serra-Grabulosa, J.M. (2003). Cerebral spatio-temporal dynamics of novelty processing. *Cognitive Brain Research*, 16, 383-390.
32. Atienza, M., Cantero, J.L., Grau, C., Gómez, C., Domínguez-Marín, E. & Escera, C. (2003). Effects of temporal encoding on auditory object formation: a mismatch negativity study. *Cognitive Brain Research*, 16, 359-371.
33. Polo, M.D., Escera, C., Yago, E., Alho, K., Gual, A., & Grau, C. (2003). Electrophysiological evidence of abnormal activation of the cerebral network of involuntary attention in alcoholism. *Clinical Neurophysiology*, 114, 134-136.
34. Escera, C., Corral, M.J. & Yago, E. (2002). An electrophysiological and behavioral investigation of involuntary attention towards auditory frequency, duration and intensity changes. *Cognitive Brain Research*, 14, 325-332.
35. Polo, M.D., Newton, P., Rogers, D., Escera, C. & Butler, S.R. (2002). ERP and behavioural indices of long-term preattentive and attentive deficits after closed head injury. *Neuropsychologia*, 40, 2350-2359.
36. Yago, E., Corral, M.J. & Escera, C. (2001). Activation of the brain network of involuntary attention as a function of auditory frequency change. *NeuroReport*, 12, 4093-4097.
37. Serra, J.M., Grau, C., Escera, C. & Sánchez-Turet, M. (2001). The H1-receptor antagonist dextro-Chlorpheniramine impairs selective auditory attention in the absence of subjective awareness of this impairment. *Journal of Clinical Psychopharmacology*, 21, 599-602.
38. Gumenyuk, V., Korzyukov, O., Alho, K., Escera, C., Schröger, E., Ilmoniemi, R.J. & Näätänen, R. (2001). Brain activity indices of distractibility in healthy children of school age. *Neuroscience Letters*, 314, 147-150.
39. Atienza, M., Cantero, J.L. & Escera, C. (2001). Auditory information processing during human sleep as revealed by event-related brain potentials. *Clinical Neurophysiology*, 112, 2031-2045.
40. Escera, C., Yago, E. & Alho, K. (2001). Electrical responses reveal the temporal dynamics of brain events during involuntary attention switching. *European Journal of Neuroscience*, 14, 877-883.

41. Yago, E., Escera, C., Alho, K. & Giard, M.H. (2001). Cerebral mechanisms underlying orienting of attention towards auditory frequency changes. *NeuroReport*, 12, 2583-2587.
42. Novitski, N., Alho, K., Korzyukov, O., Carlson, S., Martinkauppi, S., Escera, C., Rinne, T., Aronen, H.J., Näätänen, R. (2001). Effects of acoustic noise of functional magnetic resonance imaging on the processing of auditory stimuli and change as reflected by event-related brain potentials. *Neuroimage*, 14, 244-251.
43. Grau, C., Polo, M.D., Yago, E., Gual, A. & Escera, C., (2001). Shorter duration of auditory sensory memory in chronic alcoholics. *Clinical Neurophysiology*, 112, 728-731.
44. Ahveninen, J., Escera, C., Polo, M.D., Grau, C. & Jääskeläinen, I (2000). Acute and chronic effects of alcohol on pre-attentive auditory processing. *Audiology & Neuro-Otology*, 5, 303-311.
45. Amenedo, E. & Escera, C. (2000). The accuracy of sound duration representation in the human brain determines the accuracy of behavioural perception. *European Journal of Neuroscience*, 12, 2570-2574.
46. Näätänen, R. & Escera, C. (2000). Mismatch negativity (MMN): Clinical and other applications. *Audiology & Neuro-Otology*, 5, 105-110.
47. Escera, C., Alho, K., Schröger, E. & Winkler, I. (2000). Involuntary attention and distractibility as evaluated with event-related brain potentials. *Audiology & Neuro-Otology*, 5, 151-166.
48. Escera, C., Yago, E., Polo, M.D. & Grau, C. (2000). The individual replicability of mismatch negativity at short and long inter-stimulus intervals. *Clinical Neurophysiology*, 111, 546-551.
49. Polo, M.d., Escera, C., Gual, C. & Grau, C. (1999). Mismatch negativity and auditory sensory memory in chronic alcoholics. *Alcoholism: Clinical and Experimental Research*, 23, 1744-1750.
50. Kaipio, M.L., Alho, K., Winkler, I, Escera, C., Surma-aho, O. & Näätänen, R. (1999). Event-related potentials reveal covert distractibility in closed head injuries. *NeuroReport*. 10, 2125-2129.
51. Huotilainen, M., Winkler, I., Alho, K., Escera, C., Virtanen, J., Jääskeläinen, I., Pekkonen, E., Ilmoniemi, R. & Näätänen, R. (1998). Combined mapping of human auditory EEG and MEG responses. *Electroencephalography and Clinical Neurophysiology*, 108, 370-379.
52. Alho, K., Winkler, I., Escera, C., Huotilainen, M., Virtanen, J., Jääskeläinen, I., Pekkonen, E. & Ilmoniemi, R. (1998). Processing of novel sounds and frequency changes in the human auditory cortex: Magnetoencephalographic recordings. *Psychophysiology*, 35, 211-224.
53. Grau, C., Escera, C., Yago, E. & Polo, M.D. (1998). Mismatch Negativity and auditory sensory memory evaluation: A new faster paradigm. *NeuroReport*, 9, 2451-2456.
54. Escera, C., Alho, K., Winkler, I. & Näätänen, R. (1998). Neural mechanisms of involuntary attention to acoustic novelty and change. *Journal of Cognitive Neuroscience*, 10(5), 590-604.
55. Alho, K., Escera, C., Díaz, R., Yago, E. & Serra, J.M. (1997). Effects of involuntary auditory attention on visual task performance and brain activity. *NeuroReport*, 8, 3233-3237.
56. Escera, C. (1997). Nuevas aplicaciones clínicas de los potenciales evocados: *Mismatch Negativity*. *Medicina Clínica*, 108, 701-708.
57. Jääskeläinen, I., Alho, K., Escera, C., Winkler, I., Sillanaukee, P. & Näätänen, R. (1996). Effects of ethanol and auditory distraction on forced choice reaction time. *Alcohol*, 13, 153-156.
58. Serra, J.M., Escera, C., Sánchez-Turet, M., Sánchez-Sastre, J. & Grau, C. (1996). The H<sub>1</sub>-receptor antagonist chlorpheniramine decreases the ending phase of the mismatch negativity of the human auditory event-related potentials. *Neuroscience Letters*, 203, 77-80.
59. Escera, C. & Grau, C. (1996). Short-term replicability of the mismatch negativity. *Electroencephalography and Clinical Neurophysiology*, 100, 549-554.
60. Grau, C., Escera, C., Cilveti, R., García, M., Fernández, JR., Mojón, A. & Hermida, R. (1995). Ultradian rhythms in gross motor activity of adult humans. *Physiology and Behaviour*, 57, 411-419.
61. Escera, C. & Grau, C. (1994). Ultradian rhythms in selective auditory attention performance. *International Journal of Neuroscience*, 79, 143-155.

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