

Empatía y cognición moral en trastornos neurológicos y psiquiátricos

Sandra Báez, PhD.

sj.baez@uniandes.edu.co

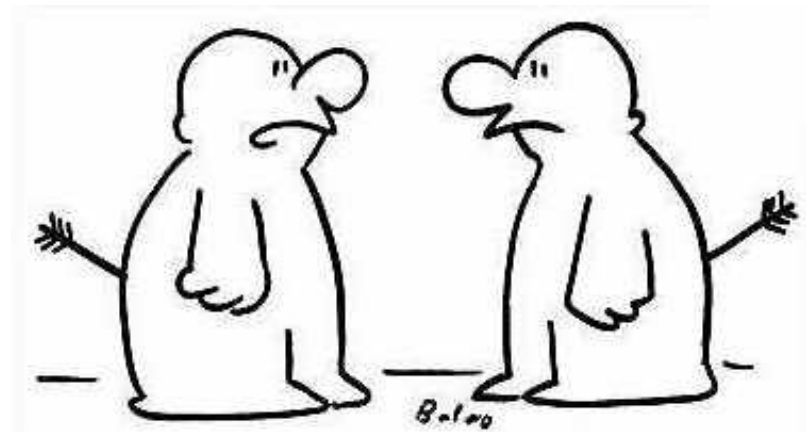


@SandraBez9

Sinopsis

- Empatía y cognición moral
 - Empatía afectiva y cognitiva
 - Juicio moral
 - Emociones morales
- Conclusiones

Empatía

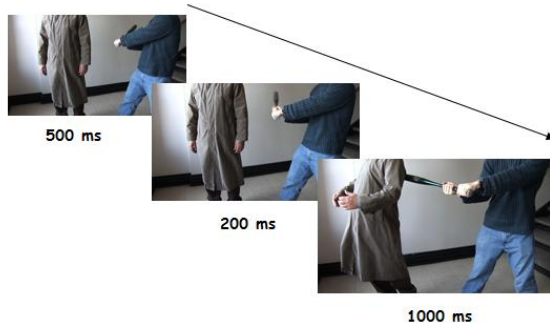


"I know exactly how you feel."

Tarea de empatía frente al dolor

A.

Situación de dolor intencional



Situación de dolor accidental



Situación neutral



B.

Puntuación de preocupación empática



Puntuación de intención de lastimar



Puntuación de castigo



Decety, Michalska, y Kinzler (2012). *Cerebral Cortex*, 22(1), 209-220.

Baez S, et al (2013). *PLoS One*. 8:3. doi: 10.1371/journal.pone.0057664.

Baez S, et al (2012). *Front in Human Neuroscience*. 6. doi: 10.3389/fnhum.2012.00302.

Baez S, et al (2014). *Front in Aging Neuroscience*. doi: 10.3389/fnagi.2014.00262



Integrating intention and context: assessing social cognition in adults with Asperger syndrome

Sandra Baez^{1,2,3†}, Alexia Rattazzi⁴, María L. Gonzalez-Gadea^{1,2}, Teresa Torralva¹, Nora Silvana Vigliecca^{2,5}, Jean Decety⁶, Facundo Manes¹ and Agustín Ibañez^{1,2,7*}



Contents lists available at ScienceDirect

Neuropsychologia

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

Impairments in negative emotion recognition and empathy for pain in Huntington's disease families

Sandra Baez^{a,b,c,d,1}, Eduar Herrera^{c,e,1}, Oscar Gershanik^{a,b,c}, Adolfo M. García^{c,g}, Yamile Bocanegra^{b,i}, Lucila Kargieman^{a,b,c,d}, Facundo Manes^{a,b,c,d,f}, Agustín Ibañez^{a,b,c,d,e,f,*}



Primary empathy deficits in frontotemporal dementia

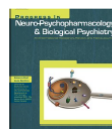
Sandra Baez^{1,2,3,4†}, Facundo Manes^{1,2,3,5}, David Huepe^{2,6}, Teresa Torralva^{1,2}, Natalia Fiorentino^{1,2}, Fabian Richter⁷, Daniela Huepe^{2,6}, Jessica Ferrari¹, Patricia Montañes⁸, Pablo Reyes⁸, Diana Matallana⁸, Nora S. Vigliecca^{3,9}, Jean Decety¹⁰ and Agustín Ibañez^{1,2,3,5*}



Contents lists available at ScienceDirect

Progress in Neuropsychopharmacology & Biological Psychiatry

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



Empathy deficits and their behavioral, neuroanatomical, and functional connectivity correlates in smoked cocaine users

Sandra Baez^a, Sol Fittipaldi^{b,c}, Laura Alethia de la Fuente^{b,d,k}, Marcela Carballo^e, Rodolfo Ferrando^{f,1}, Indira García-Cordero^{b,c}, Cecilia Gonzalez Campo^{b,c}, Adolfo M. García^{b,c,g,h,j}, Lucas Sedeño^b, Agustín Ibañez^{b,c,i,j,*}



Contextual Social Cognition Impairments in Schizophrenia and Bipolar Disorder

Sandra Baez^{1,2,4,5}, Eduar Herrera^{3,9}, Lilian Villarin⁶, Donna Theil¹⁰, María Luz Gonzalez-Gadea^{1,2}, Pedro Gomez⁸, Marcela Mosquera⁹, David Huepe⁵, Sergio Strejilevich¹, Nora Silvana Vigliecca^{2,11}, Franziska Matthäus⁶, Jean Decety⁷, Facundo Manes¹, Agustín M. Ibañez^{1,2,5*}



Tracking the cognitive, social, and neuroanatomical profile in early neurodegeneration: type III Cockayne syndrome

Sandra Baez^{1,2,3,4†}, Blas Couto^{1,2†}, Eduar Herrera⁵, Yamile Bocanegra^{6,7}, Natalia Trujillo-Orrego⁷, Lucía Madrigal-Zapata⁷, Juan Felipe Cardona^{1,2}, Facundo Manes^{1,2,4,8}, Agustín Ibañez^{1,2,4} and Andres Villegas^{7*}



Emotion recognition and cognitive empathy deficits in adolescent offenders revealed by context-sensitive tasks

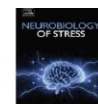
María Luz Gonzalez-Gadea^{1,2,3†}, Eduar Herrera^{1,2,4†}, Mario Parra^{3,5,6,7}, Pedro Gomez Mendez⁸, Sandra Baez^{1,2,3}, Facundo Manes^{1,2,3,9} and Agustín Ibañez^{1,2,3,4,9*}



Contents lists available at ScienceDirect

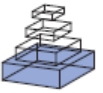
Neurobiology of Stress

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



Neuroanatomical markers of social cognition in neglected adolescents

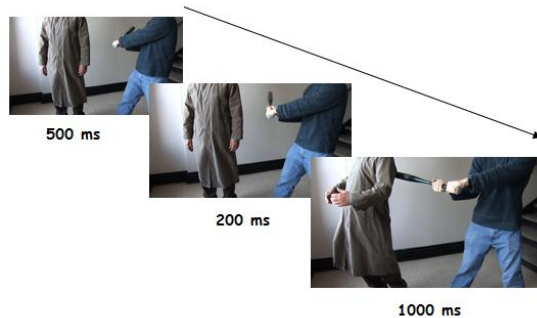
Catalina Trujillo-Llano^{a,b}, Agustín Sainz-Ballesteros^{c,d,e}, Fabián Suarez-Ardila^f, María Luz Gonzalez-Gadea^{g,h}, Agustín Ibañez^{g,i,j,k}, Eduar Herrera^{f,*}, Sandra Baez^{j,k,l,*}



Primary empathy deficits in frontotemporal dementia

Sandra Baez^{1,2,3,4†}, Facundo Manes^{1,2,3,5}, David Huepe^{2,6}, Teresa Torralva^{1,2}, Natalia Fiorentino^{1,2}, Fabian Richter⁷, Daniela Huepe^{2,6}, Jesica Ferrari¹, Patricia Montañes⁸, Pablo Reyes⁸, Diana Matallana⁸, Nora S. Vigliecca^{3,9}, Jean Decety¹⁰ and Agustin Ibanez^{1,2,3,5*}

A. Intentional Pain Situations



Accidental Pain Situations



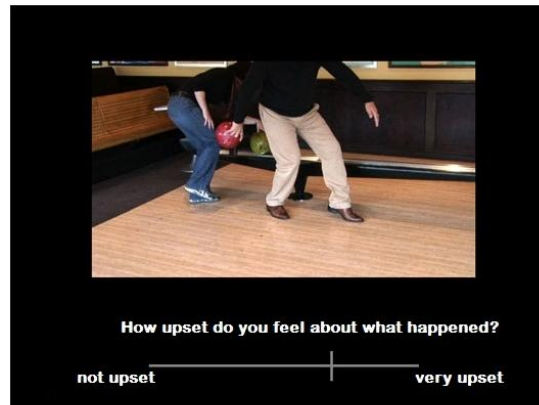
Neutral Situations



B. Empathic Concern Rating



Discomfort Rating



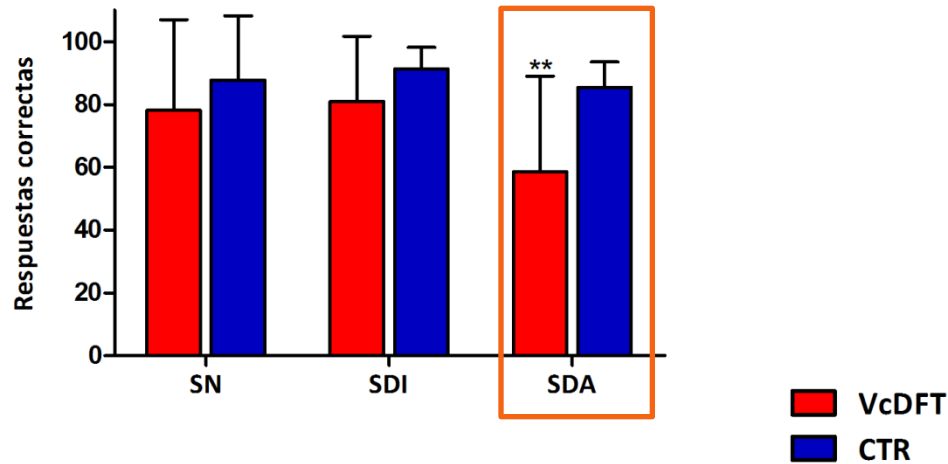
Punishment Rating



Empatía

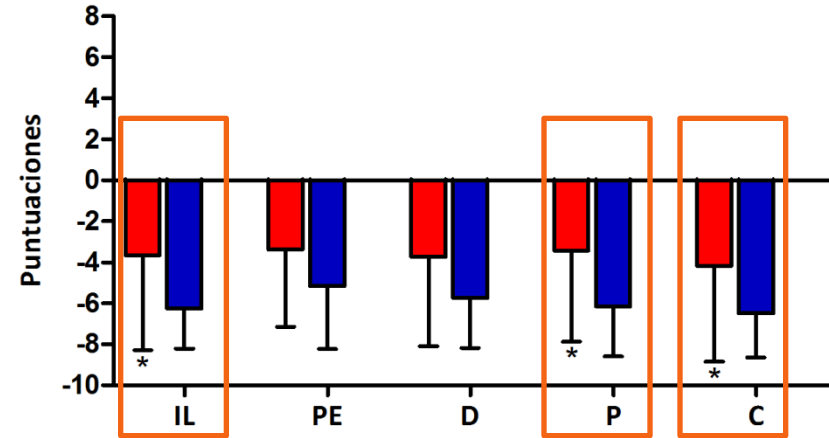
A.

Intencionalidad



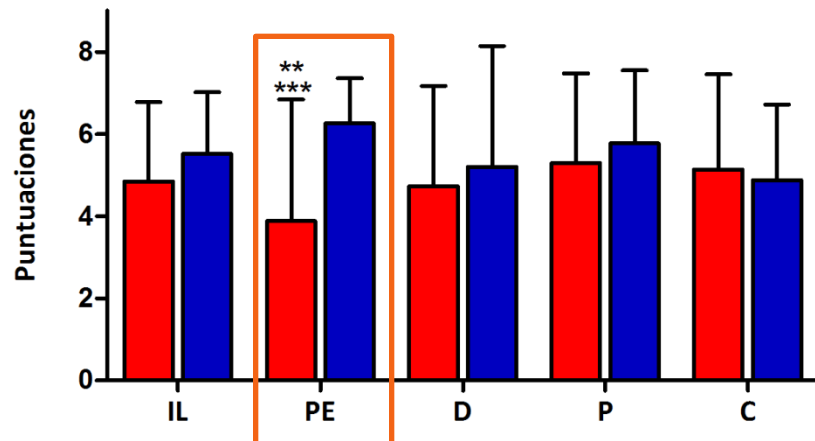
B.

Puntuaciones-Situaciones Neutrales



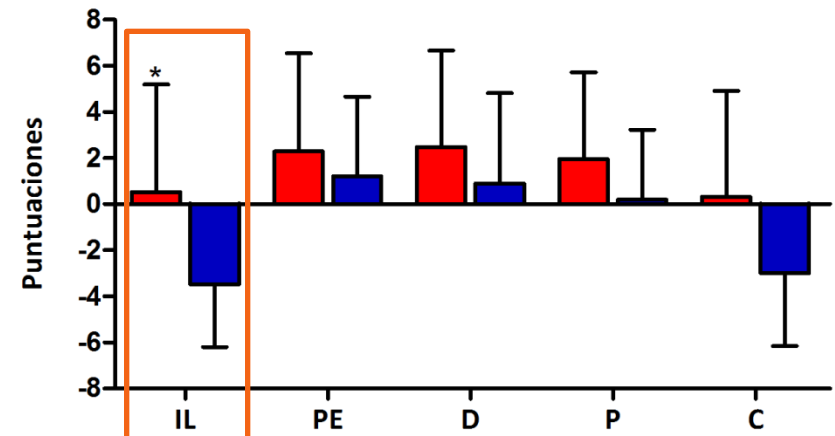
C.

Puntuaciones-Dolor Intencional

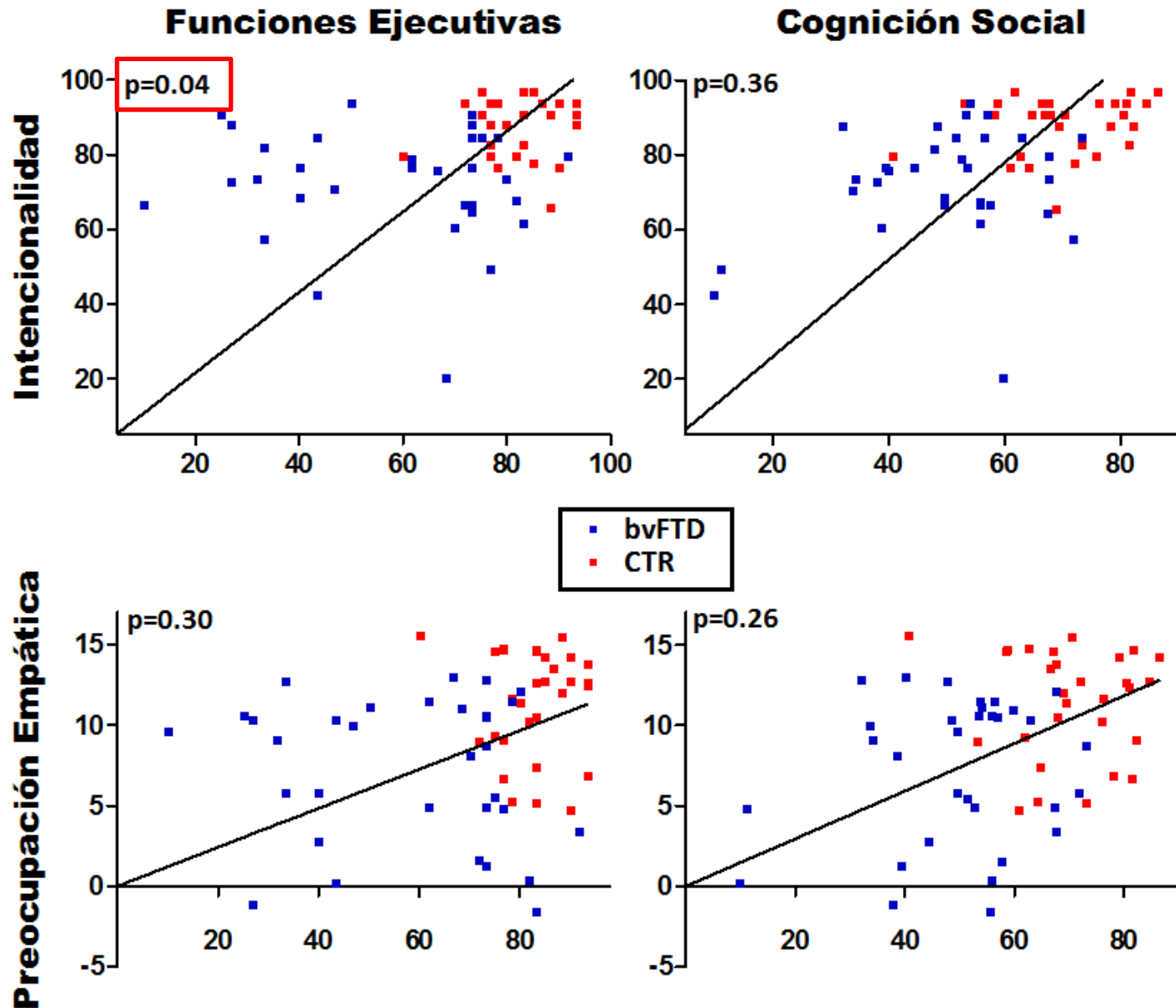


D.

Puntuaciones-Dolor Accidental



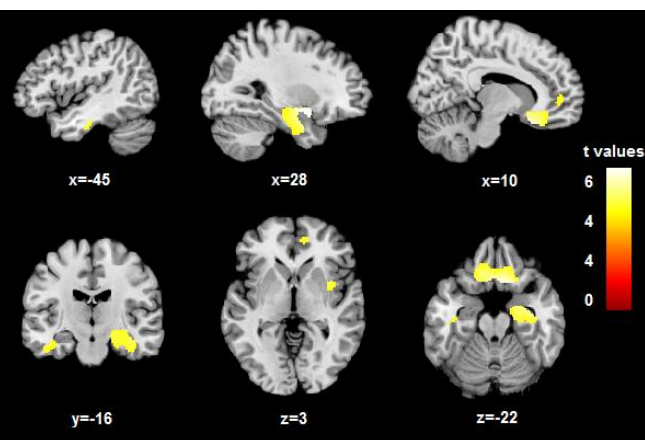
¿El rendimiento en la tarea de empatía se explica parcialmente por el rendimiento en otros dominios de la cognición social o en las FE?



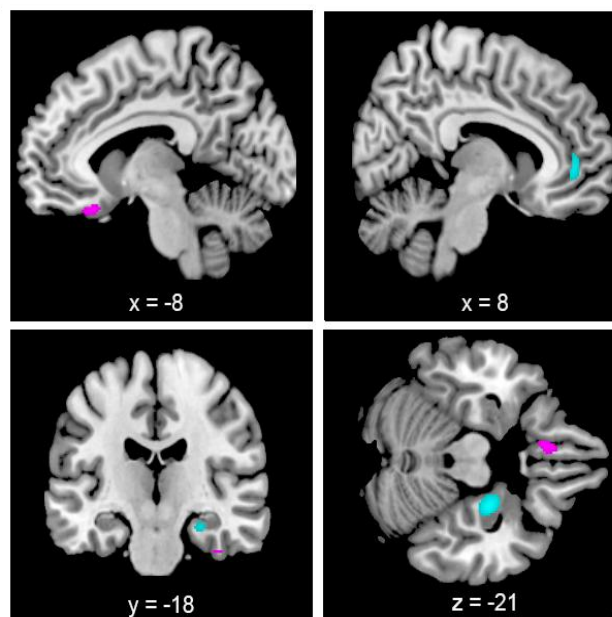


Orbitofrontal and limbic signatures of empathic concern and intentional harm in the behavioral variant frontotemporal dementia

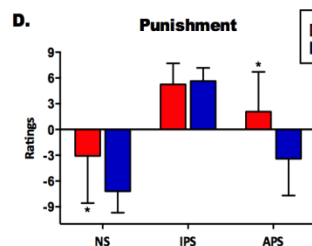
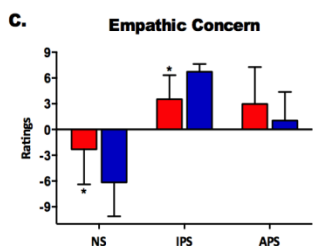
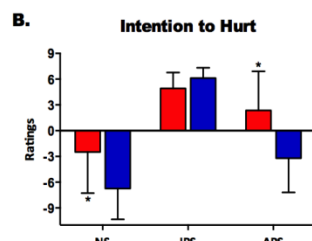
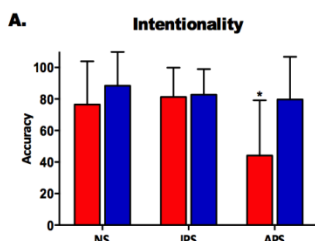
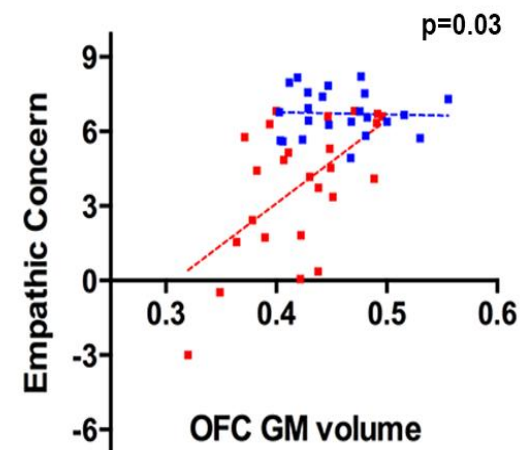
Sandra Baez^{a b c} ✉, Juan P. Morales^b ✉, Andrea Slachevsky^{h i j k} ✉, Teresa Torralva^{a b} ✉, Cristian Matus^{f g} ✉, Facundo Manes^{a b c e} ✉, Agustín Ibáñez^{a b c d e} ✉



A.



B.



■ BvFTD
■ CTR

■ Empathic concern
■ Intentionality

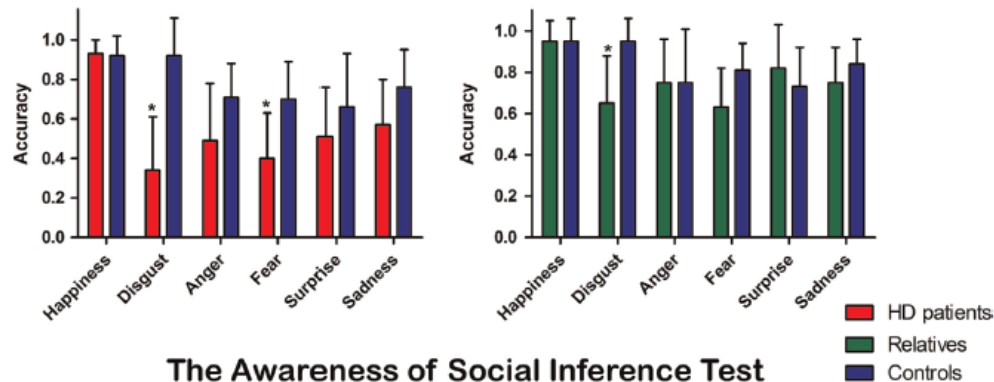
--- Controls
--- Patients



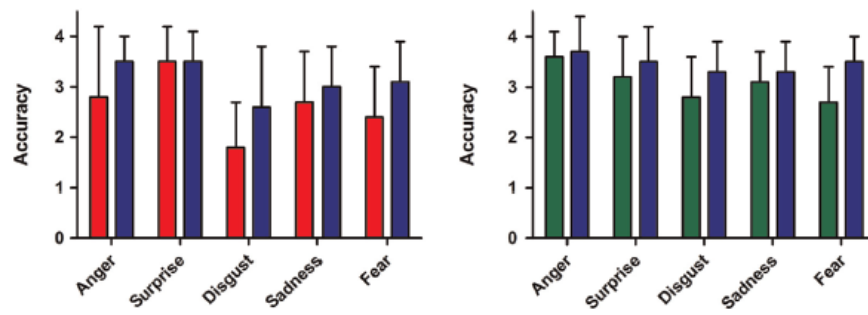
Impairments in negative emotion recognition and empathy for pain in Huntington's disease families

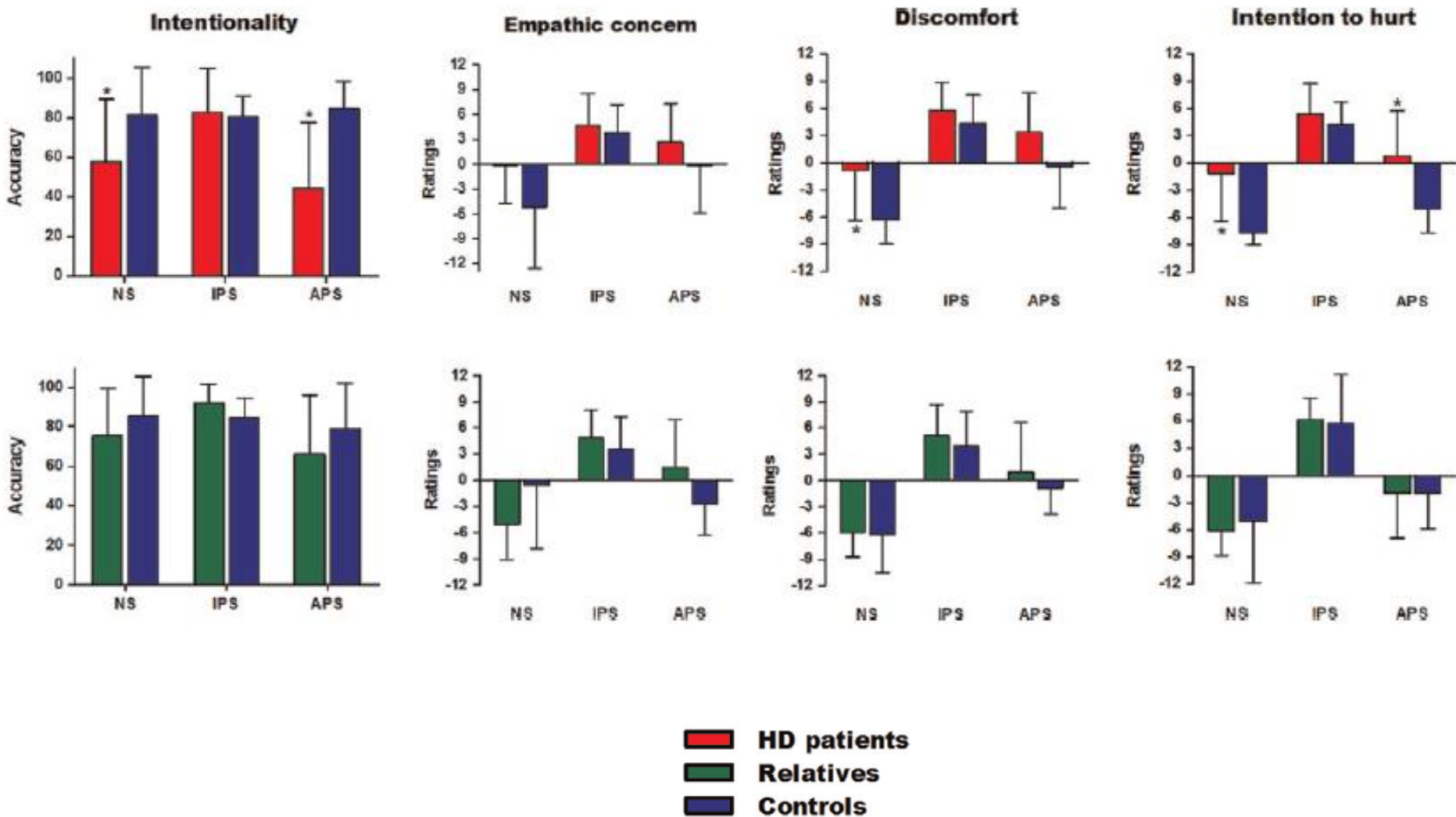
Sandra Baez^{a,b,c,d,1}, Eduar Herrera^{c,e,1}, Oscar Gershanik^{a,b,c}, Adolfo M. Garcia^{c,g}, Yamile Bocanegra^{h,i}, Lucila Kargieman^{a,b,c,d}, Facundo Manes^{a,b,c,d,f}, Agustin Ibanez^{a,b,c,d,e,f,*}

Emotional Morphing Task



The Awareness of Social Inference Test





Moral judgment



a

Accidental harm

Grace and her friend are taking a tour of a chemical plant. When Grace goes over to the coffee machine to pour some coffee, Grace's friend asks for some sugar in hers. **There is white powder in a container by the coffee. The white powder is a very toxic one left behind by a scientist, and therefore deadly when ingested in any form.** The container is labelled 'sugar', so Grace believes that the white powder by the coffee is **sugar** left out by the kitchen staff. Grace puts the substance in her friend's coffee. Her friend drinks the coffee and **dies**.

b

		Outcome	
		Neutral	Negative
Intention	Neutral	Grace believes that the white powder by the coffee is sugar . It is sugar . Her friend is fine .	Grace believes that the white powder by the coffee is sugar . It is toxic . Her friend dies .
	Negative	Grace believes that the white powder by the coffee is toxic . It is sugar . Her friend is fine .	Grace believes that the white powder by the coffee is toxic . It is toxic . Her friend dies .

Case Report/Case Series

Comparing Moral Judgments of Patients With Frontotemporal Dementia and Frontal Stroke

Sandra Baez, MS; Blas Couto, MD, PhD; Teresa Torralva, PsyD; Luciano A. Sposato, MD, MBA; David Huepe, PhD; Patricia Montañes, PhD; Pablo Reyes, MS; Diana Matallana, PhD; Nora S. Vigliecca, PhD; Andrea Slachevsky, PhD; Facundo Manes, MD, MS; Agustín Ibanez, PhD

Figure 1. Lesions of Patients With Prefrontal Lesions

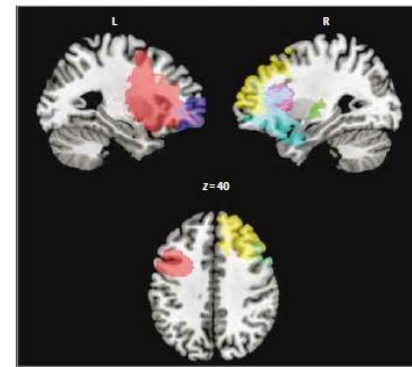
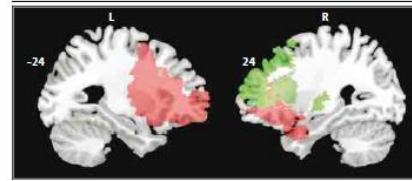
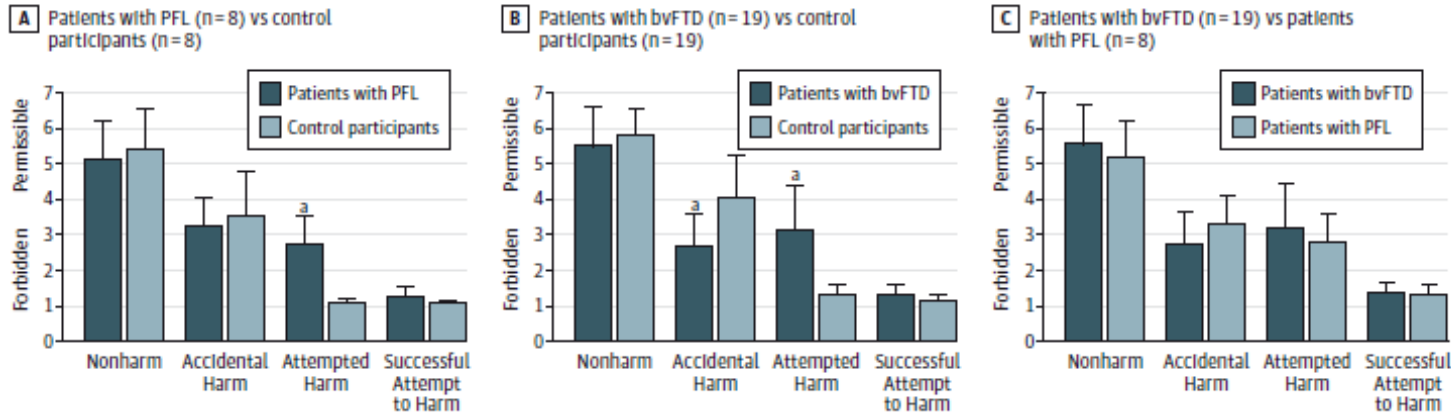


Figure 2. Lesions of Patients With and Without Involvement of the Ventromedial Prefrontal Cortex (VMPC)



Left and right brain medial views of patient lesions with (red) and without (green) VMPC damage. L indicates left and R, right.

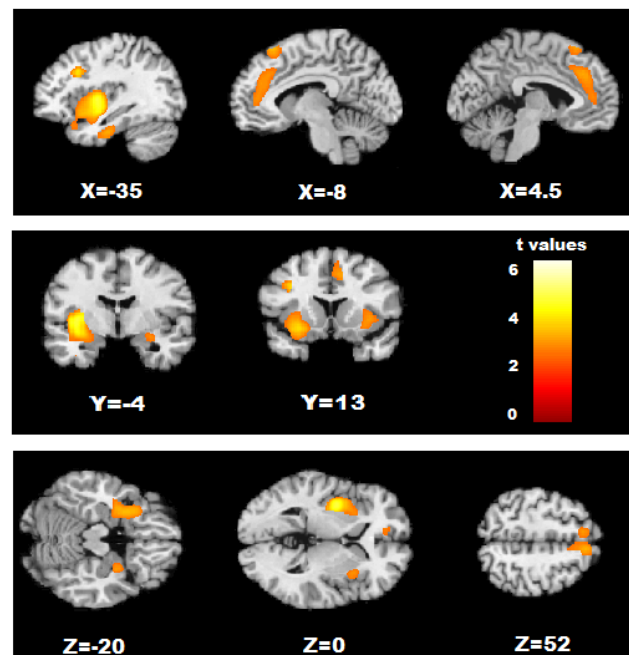
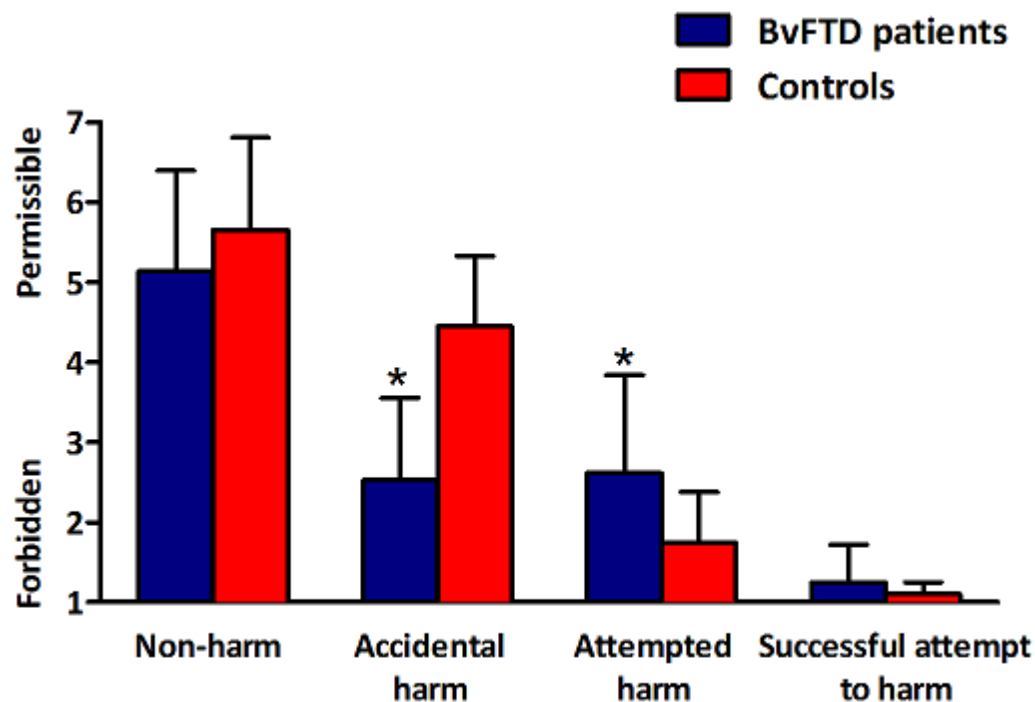
Figure 3. Moral Judgments and Significant Differences Between Groups



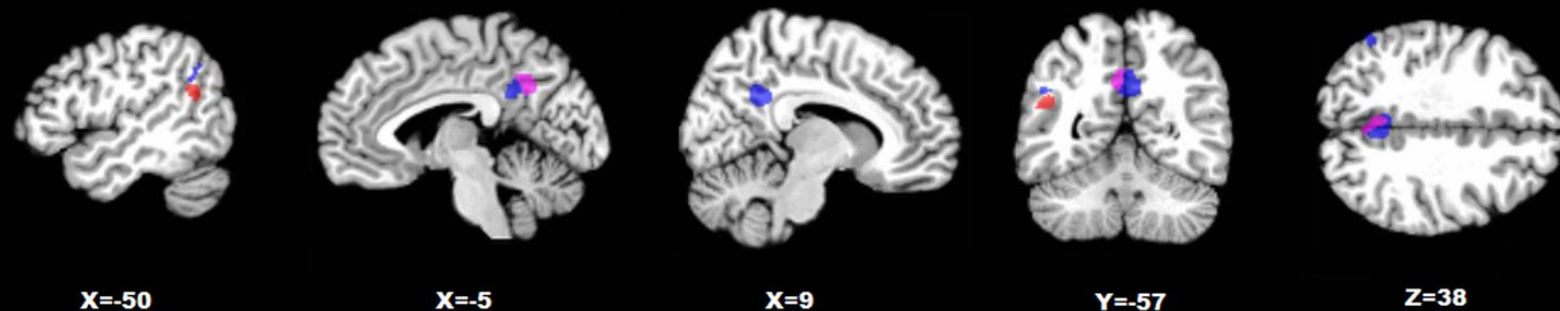
Patients with prefrontal lesions (PFL) and patients with the behavioral variant of frontotemporal dementia (bvFTD) judged attempted harm as significantly more permissible than the control participants. Patients with bvFTD judged accidental harm as less permissible than the control participants.

Integration of Intention and Outcome for Moral Judgment in Frontotemporal Dementia: Brain Structural Signatures

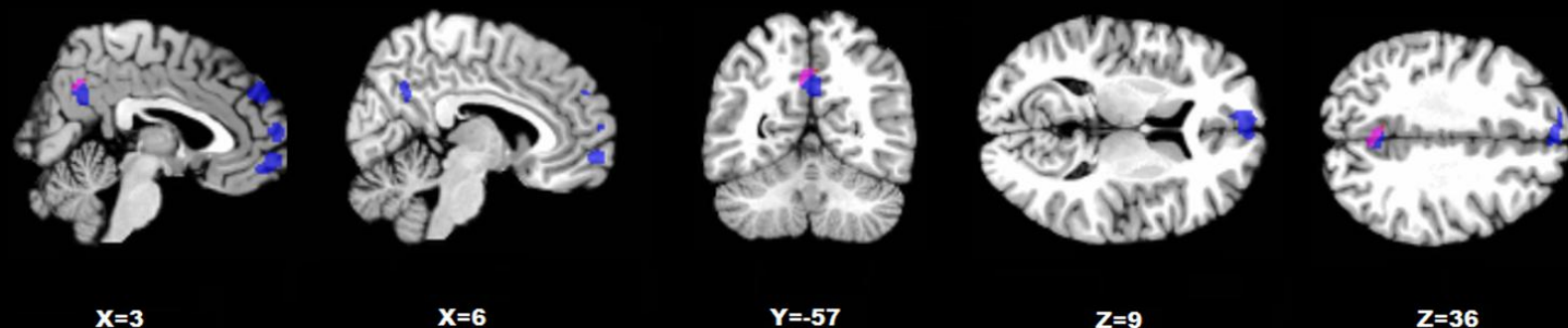
Sandra Baez^{a,b,d} Philipp Kanske^l Diana Matallana^k Patricia Montañes^l
Pablo Reyes^k Andrea Slachevsky^{e-h} Cristian Matus^{l,o} Nora Silvana Vigliecca^{b,c}
Teresa Torralva^{a,d} Facundo Manes^{b,d,n} Agustín Ibanez^{a,b,d,m,n,p}



A. Moral Global Score



B. Accidental Harm



■ BvFTD patients
■ Controls
■ Overlap

C. Attempted Harm



Emociones sociales y morales



Your misery is no longer my pleasure: Reduced schadenfreude in Huntington's disease families

Sandra Baez, Hernando Santamaría-García, Janni Orozco, Sol Fittipaldi, Adolfo M. García, Mariana Pino, Agustín Ibáñez, Ph.D.

doi:10.1093/brain/awx269

BRAIN 2017: 140; 3357–3377 | 3357

BRAIN
A JOURNAL OF NEUROLOGY

A lesion model of envy and Schadenfreude: legal, deservingness and moral dimensions as revealed by neurodegeneration

Hernando Santamaría-García,^{1,2,3,4,5} Sandra Baez,^{3,4,5,6} Pablo Reyes,^{1,2} José A. Santamaría-García,⁶ José M. Santacruz-Escudero,^{1,2,7} Diana Matallana,^{1,2} Analía Arévalo,⁸ Mariano Sigman,⁹ Adolfo M. García^{3,4,10} and Agustín Ibáñez^{3,4,11,12,13}

Motivation and Emotion
<https://doi.org/10.1007/s11031-024-10079-w>

ORIGINAL PAPER

Context-dependent basic and moral emotions in adults with autism

Cristina Bleier¹ · Valentina Peralta¹ · Catalina Holguín¹ · Ana-María Gómez-Carvajal² · Camila Castella...
Sol Fittipaldi^{5,6,9} · Hernando Santamaría-García^{7,8} · Sandra Baez^{1,6}

Palacio et al. BMC Psychology (2022) 10:303
<https://doi.org/10.1186/s40359-022-01005-1>

BMC Psychology

RESEARCH Open Access

The impact of breast cancer on social cognition in female Colombian patients

Nicole Palacio^{1,2}, Daniela Nicole Romero^{1,3}, Andrés Mateo Bernal¹, Daniela González-Rodríguez¹, Daniel Solarte-Bothe⁴, María del Pilar García⁶, Raúl Murillo^{5,6}, Hernando Santamaría-García^{4,7} and Sandra Báez^{1*}



Cortico-striatal signatures of schadenfreude: evidence from Huntington's disease

Sandra Baez,^{1,2,3,4} Mariana Pino,⁵ Mildred Berrío,⁵ Hernando Santamaría-García,^{1,3,4,6} Lucas Sedeño,^{1,4} Adolfo M García,^{1,4,7} Sol Fittipaldi,^{1,4} Agustín Ibáñez^{1,4,5,8,9}

> J Alzheimers Dis. 2023;92(1):153-169. doi: 10.3233/JAD-221131.

Moral Emotions and Their Brain Structural Correlates Across Neurodegenerative Disorders

Sandra Baez¹, Catalina Trujillo-Llano^{2,3}, Leonardo Cruz de Souza⁴, Patricia Lillo^{5,6}, Gonzalo Forno^{7,8}, Hernando Santamaría-García^{9,10,11}, Cecilia Okuma^{12,13}, Patricio Alegria¹⁴, David Huepe¹⁵, Agustín Ibáñez^{15,16,17,18,19}, Jean Decety²⁰, Andrea Slachevsky^{5,8,21,22}

SHORT COMMUNICATION EJN European Journal of Neuroscience FENS WILEY

Overactivation of posterior insular, postcentral and temporal regions during preserved experience of envy in autism

Sol Fittipaldi^{1,2,3,4,5} | Jorge L. Armony⁶ | Joaquín Migeot^{1,7} |
Matias Cadaveira⁸ | Agustín Ibáñez^{1,2,3,4,5} | Sandra Baez⁹

The unique social sense of puerperium: Increased empathy and Schadenfreude in parents of newborns

Ana-María Gómez-Carvajal^{1,2,14}, Hernando Santamaría-García^{3,4,14}, Adolfo M. García^{5,6,7,8}, Mario Valderrama⁹, Jhony Mejía⁹, Jose Santamaría-García¹⁰, Mateo Bernal¹, Jaime Silva¹⁰, Agustín Ibáñez^{5,6,11,12,13} & Sandra Baez^{1,14*}



Envidia y *Schadenfreude*



Cognition and Emotion

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/pcem20>

When envy leads to schadenfreude

Niels van de Ven^a, Charles E. Hoogland^b, Richard H. Smith^b, Wilco W. van Dijk^c, Seger M. Breugelmans^{ad} & Marcel Zeelenberg^a

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

Issue: *Sociability, Responsibility, and Criminality: From Lab to Law*

Their pain, our pleasure: stereotype content and schadenfreude

Mina Cikara¹ and Susan T. Fiske²

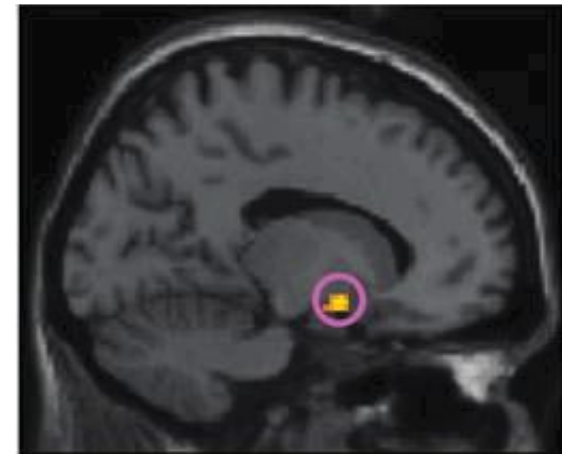


When Your Gain Is My Pain and Your Pain Is My Gain: Neural Correlates of Envy and Schadenfreude

Hidehiko Takahashi, *et al.*

Science **323**, 937 (2009);

DOI: 10.1126/science.1165604



Your misery is no longer my pleasure: Reduced schadenfreude in Huntington's disease families

Sandra Baez, Hernando Santamaría-García, Janni Orozco, Sol Fittipaldi, Adolfo M. García, Mariana Pino, Agustín Ibáñez, Ph.D.



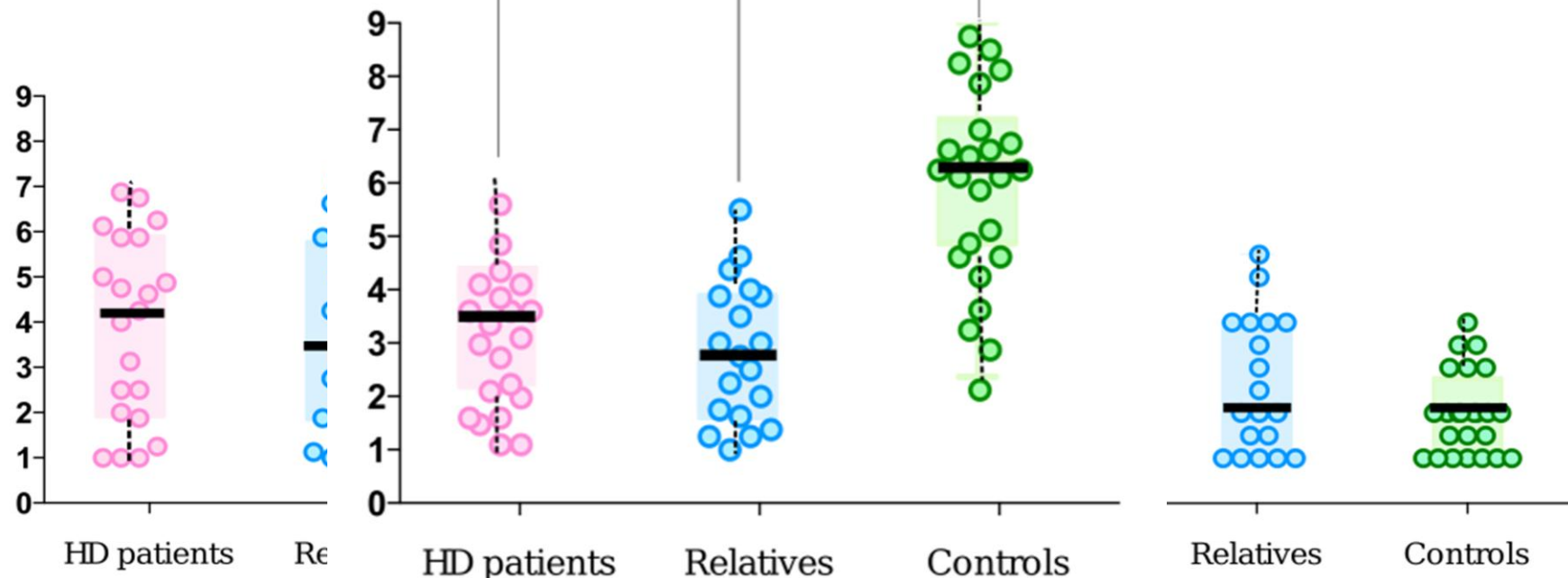
Schadenfreude

E

$p < 0.001$

$p < 0.001$

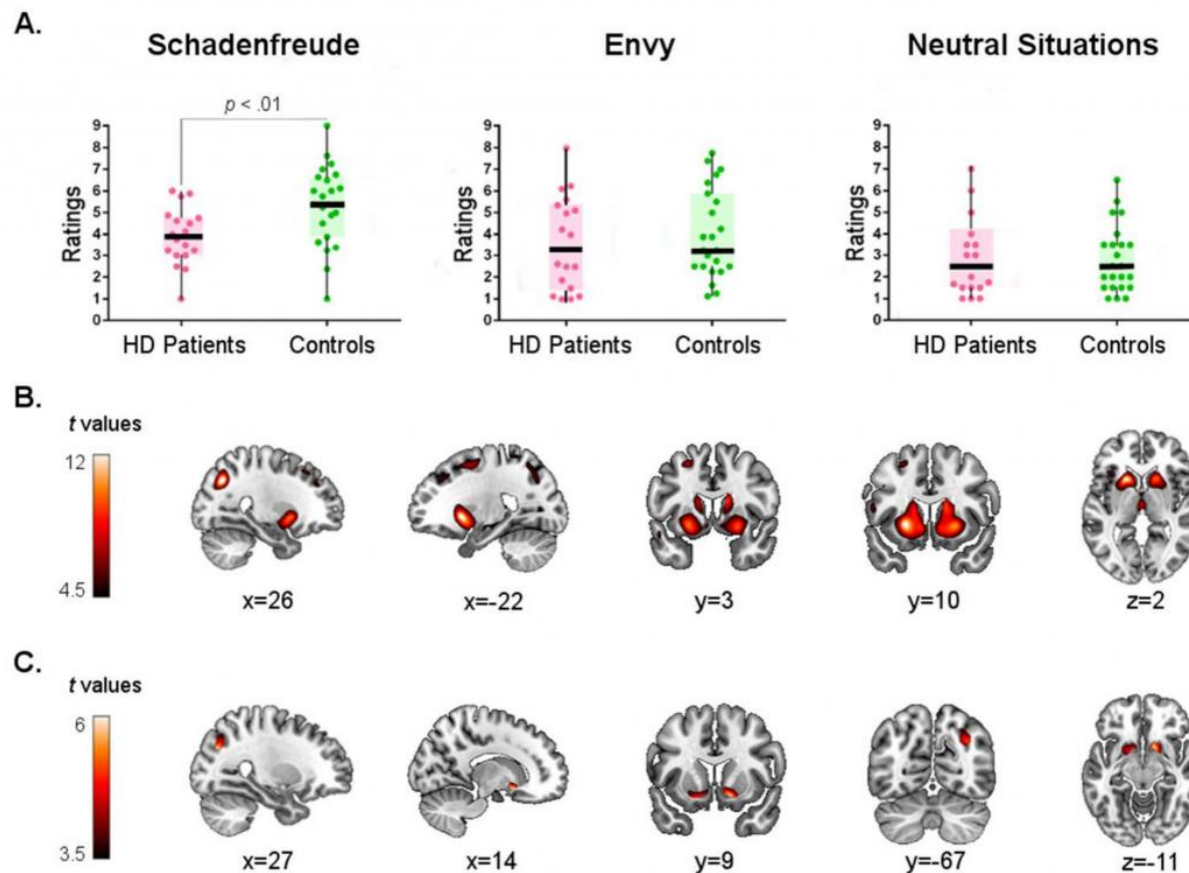
Ratings



l Situations

Corticostriatal signatures of schadenfreude: evidence from Huntington's disease

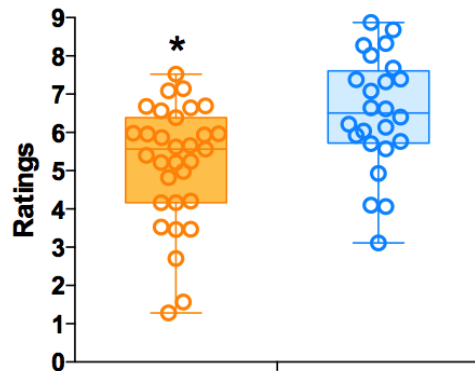
Sandra Baez,^{1,2,3,4} Mariana Pino,⁵ Mildred Berrío,⁵ Hernando Santamaría-García,^{1,3,4,6}
Lucas Sedeño,^{1,4} Adolfo M García,^{1,4,7} Sol Fittipaldi,^{1,4} Agustín Ibáñez^{1,4,5,8,9}



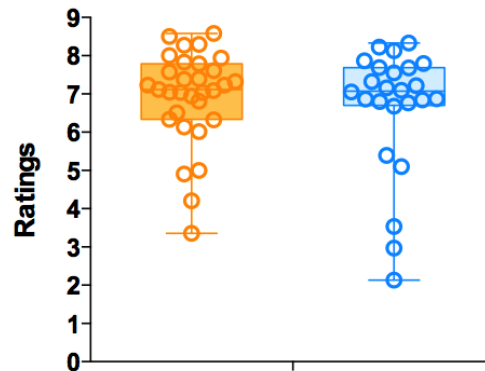
Classifying Parkinson's Disease Patients With Syntactic and Socio-emotional Verbal Measures

Sandra Baez^{1†}, Eduar Herrera^{2†}, Catalina Trujillo³, Juan F. Cardona³,
Jesus A. Diazgranados⁴, Mariana Pino⁵, Hernando Santamaría-García^{6,7},
Agustín Ibáñez^{5,8,9,10,11} and Adolfo M. García^{8,9,11,12*}

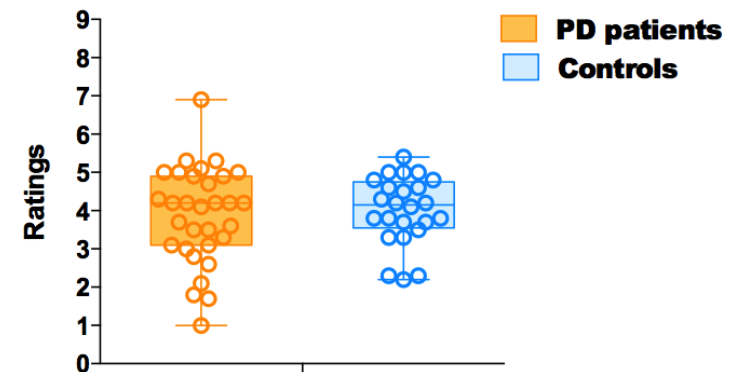
Schadenfreude



Envy

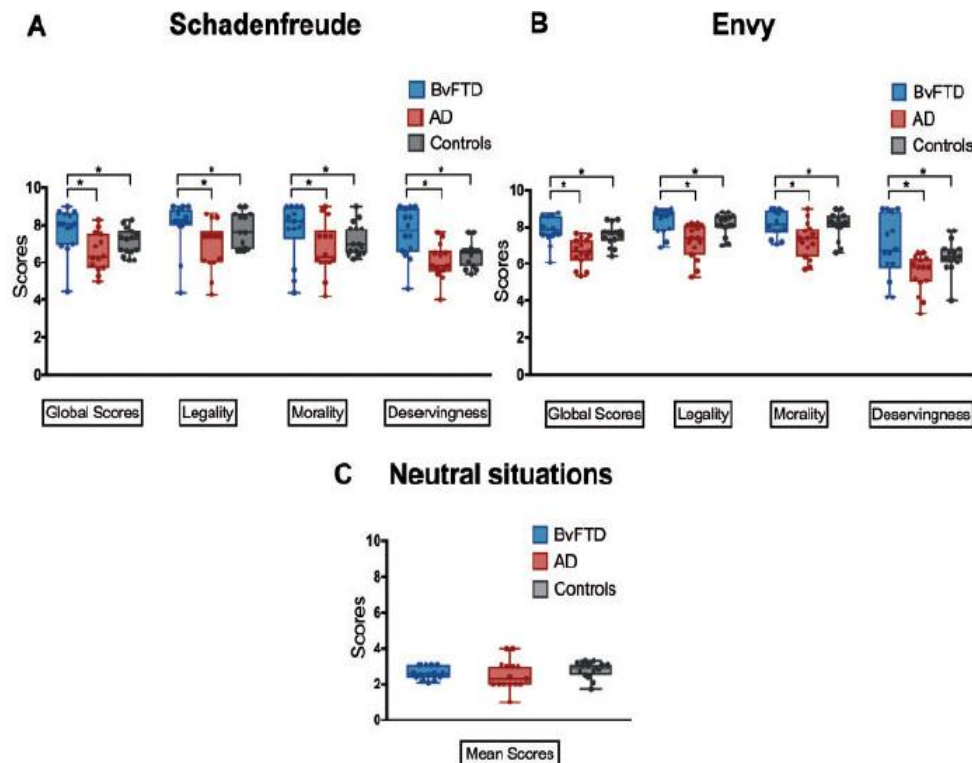


Neutral Situations

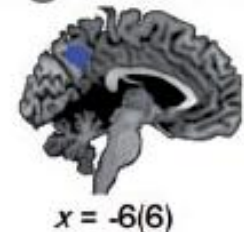
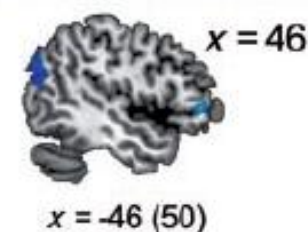


A lesion model of envy and *Schadenfreude*: legal, deservingness and moral dimensions as revealed by neurodegeneration

Hernando Santamaría-García,^{1,2,3,4,5} Sandra Baez,^{3,4,5,6} Pablo Reyes,^{1,2}
 José A. Santamaría-García,⁶ José M. Santacruz-Escudero,^{1,2,7} Diana Matallana,^{1,2}
 Analía Arévalo,⁸ Mariano Sigman,⁹ Adolfo M. García^{3,4,10} and Agustín Ibáñez^{3,4,11,12,13}



BvFTD Patients Schadenfreude global score



Moral Emotions and Their Brain Structural Correlates Across Neurodegenerative Disorders

Sandra Baez¹, Catalina Trujillo-Llano^{2 3}, Leonardo Cruz de Souza⁴, Patricia Lillo^{5 6}, Gonzalo Forno^{7 8}, Hernando Santamaría-García^{9 10 11}, Cecilia Okuma^{12 13}, Patricio Alegria¹⁴, David Huepe¹⁵, Agustín Ibáñez^{15 16 17 18 19}, Jean Decety²⁰, Andrea Slachevsky^{5 8 21 22}

A. You called your office pretending you were sick and did not go to work. You met your boss that same night in a pub.

Which emotion would you feel?

Guilt Anger **Embarrassment** Neutral

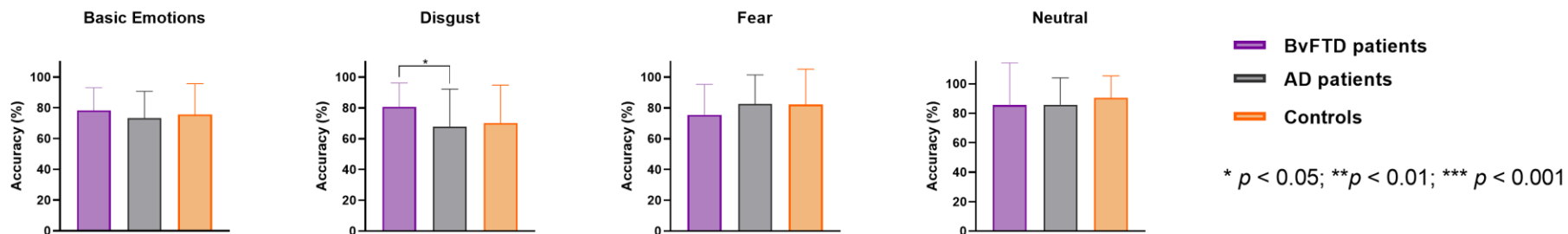
B. How intense would be your emotion?



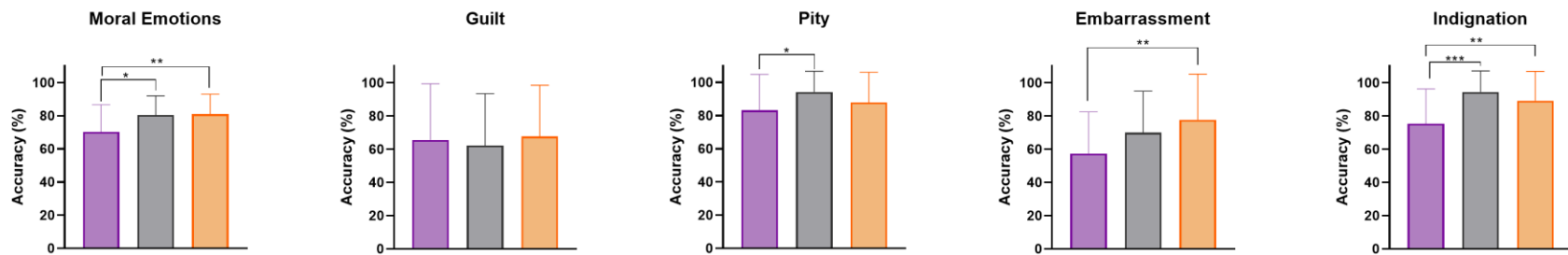
How concerned would you feel in this situation?

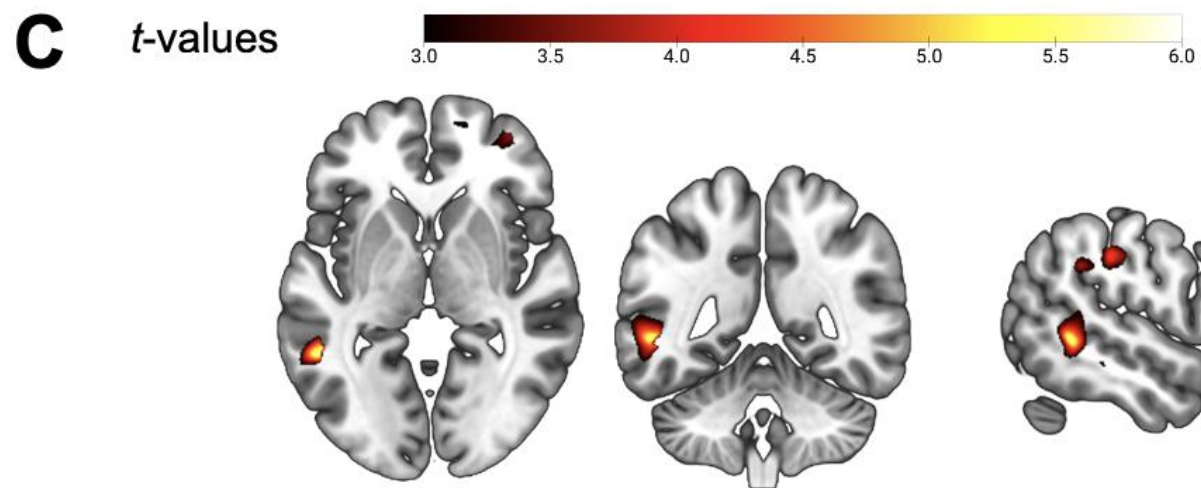
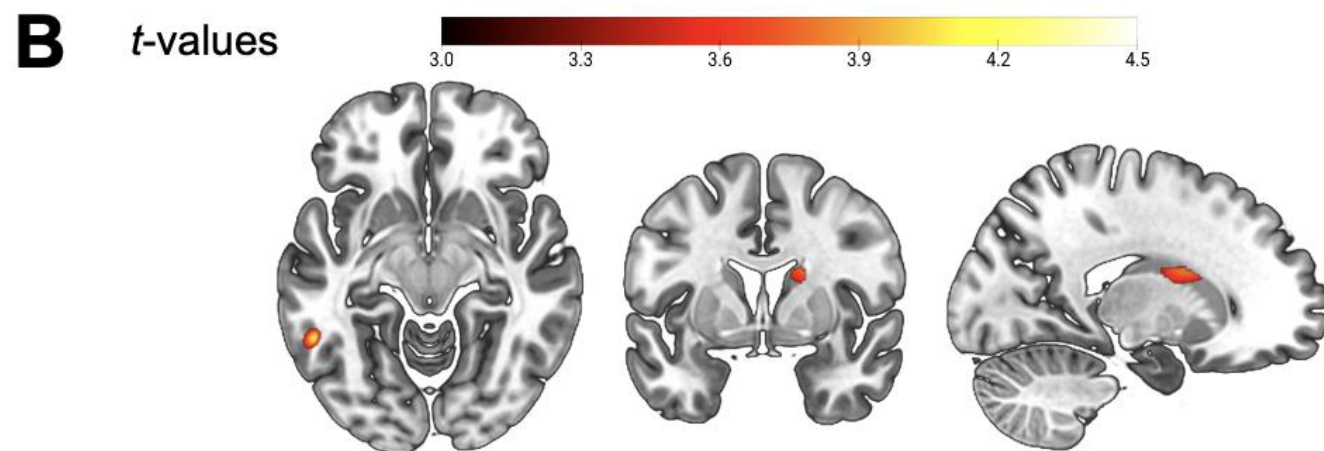
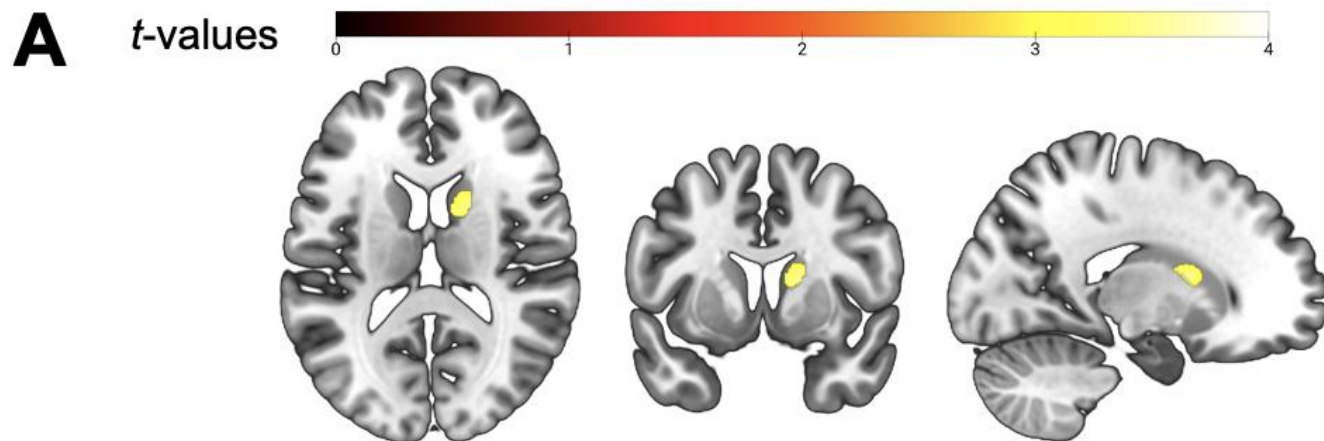


A.



B.



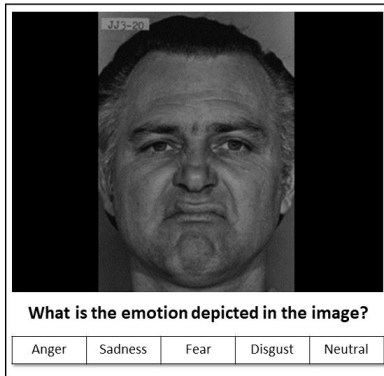




Context-dependent basic and moral emotions in adults with autism

Cristina Bleier¹ · Valentina Peralta¹ · Catalina Holguín¹ · Ana-María Gómez-Carvajal² · Camila Castellanos^{3,4} · Sol Fittipaldi^{5,6,9} · Hernando Santamaría-García^{7,8} · Sandra Baez^{1,6}

A. Task A



B. Task B

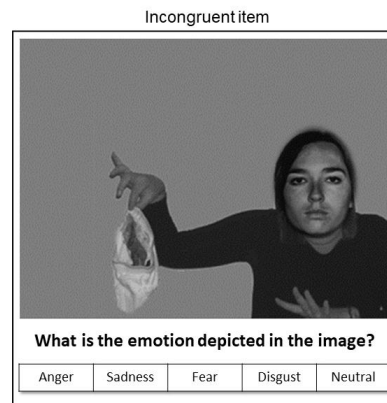
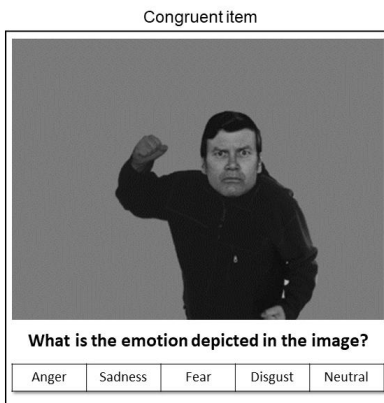


A. You called your office pretending you were sick and did not go to work. You met your boss that same night in a pub.

Which emotion would you feel?

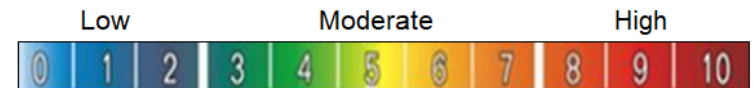
Guilt Anger **Embarrassment** Neutral

C. Task C

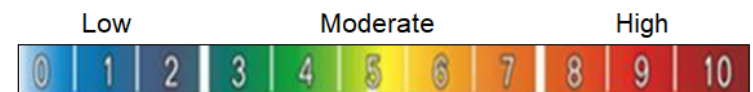


B.

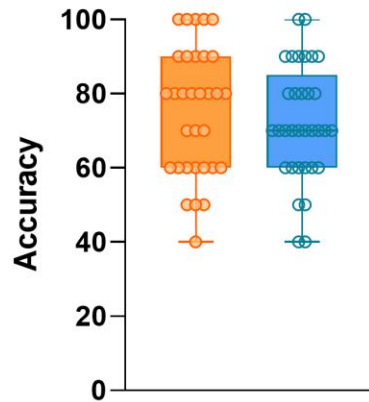
How intense would be your emotion?



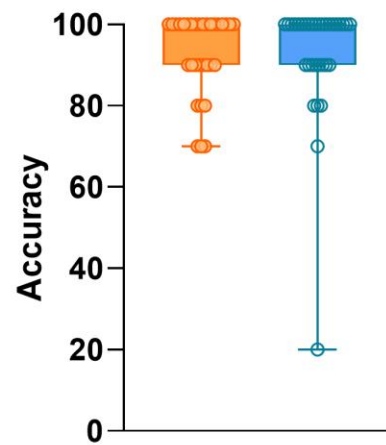
How concerned would you feel in this situation?



A. Emotions in faces

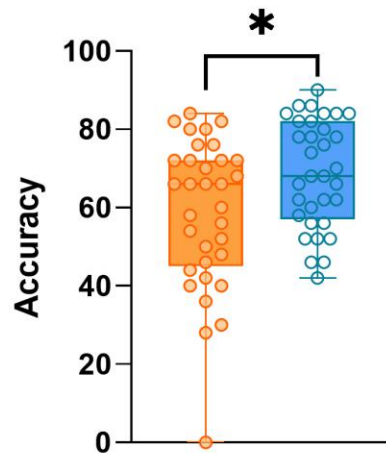


B. Emotions in bodies

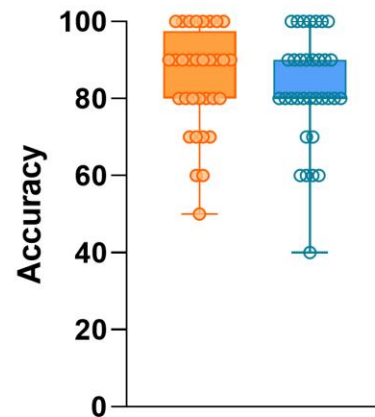


 **ASD participants**
 **Neurotypical participants**

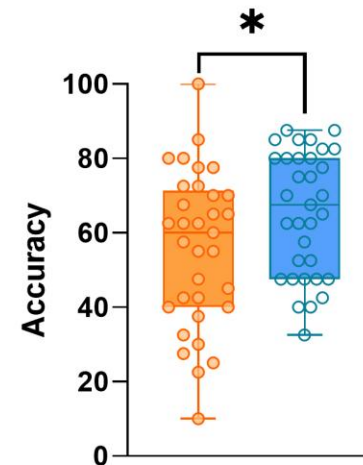
C. Contextual recognition total scores



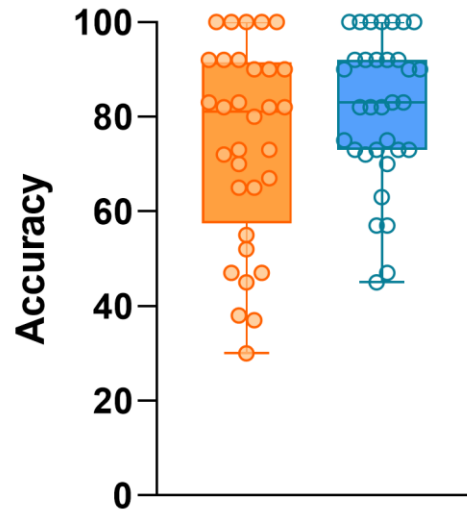
D. Congruent contexts



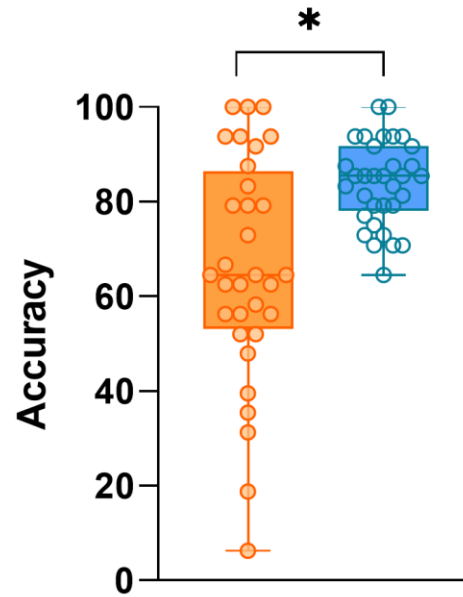
E. Incongruent contexts



A. Basic emotions

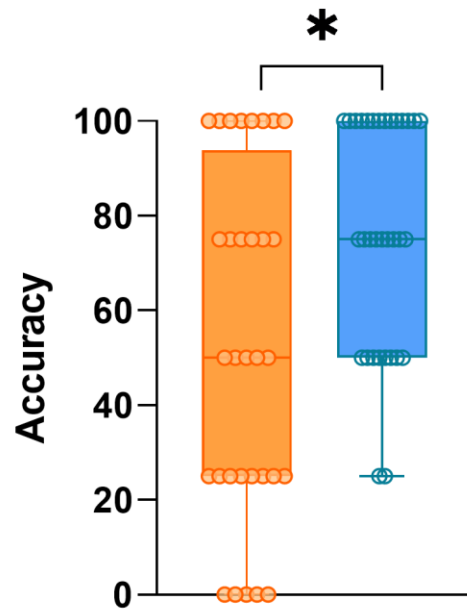


B. Moral emotions

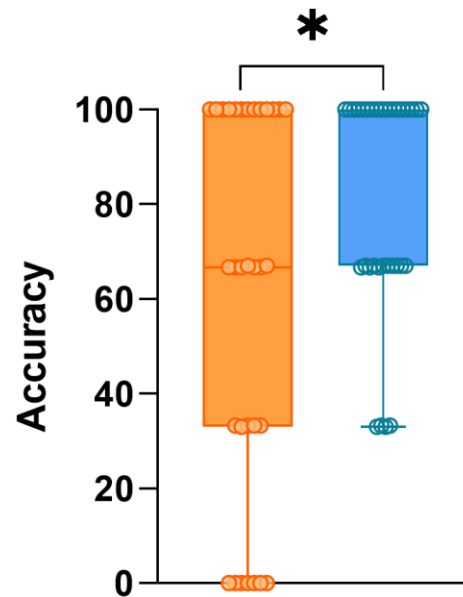


 **ASD participants**
 **Neurotypical participants**

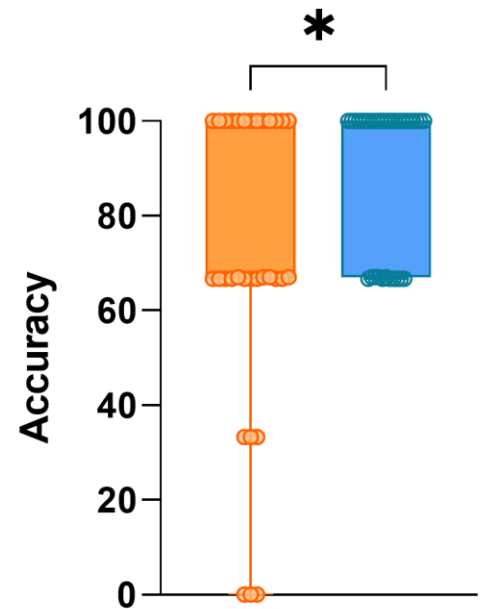
C. Embarrassment



D. Guilt



E. Indignation



Conclusiones

- Empatía y cognición moral son dominios de la cognición social afectados en condiciones neuropsiquiátricas
- Condiciones neuropsiquiátricas como modelos para estudiar los correlatos neurales de la cognición social
- Instrumentos para la evaluación de múltiples poblaciones
- Diseño e implementación de estrategias de intervención no farmacológicas

¡MUCHAS GRACIAS!

sj.baez@uniandes.edu.co