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The 2013 Pre-SfN Meeting of

The Society for Social Neuroscience

The Society for Social Neuroscience is an international interdisciplinary, non-profit, scientific society established to advance and foster scientific research, training, and applications.

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S4SN 2013 Pre-SfN Meeting
Hilton San Diego Bayfront Hotel
1 Park Blvd, San Diego, CA, 92101
S4SN 2013 Pre-SfN Meeting | Program Overview

Schedule  Friday, November 8, 2013

7:00 am—7:00 pm  Registration, Sapphire Ballroom Foyer
8:15 am—8:30 am  Welcome to S4SN 2013 Pre-SfN Meeting, Room 410
8:30 am—9:30 am  Keynote Address: Brian Knutson, “The subcortical spark of charity”

Symposium 1: Empathy and Caring, Chair: Larry Young

9:30 am—10:00 am  S1.1: Jean Decety, “What we have learned about empathy and what we haven’t?”
10:00 am—10:30 am  S1.2: Mina Cikara, “Their pain gives us pleasure: Understanding empathic failures and counter-empathic responses in intergroup contexts.”
10:30 am—10:45 am  Coffee Break, Sapphire Ballroom A

Young Investigator Contributions: Empathy in animal models, Chair: Jean Decety

10:45 am—11:05 am  S1.3: James Burkett, “Neural mechanisms of empathetic behavior in monogamous prairie voles.”
11:05 am—11:25 am  S1.4: Inbal Ben-Ami Bartal, “Empathic helping in rats and its modulation by social parameters.”
11:25 am—11:35 am  Discussion

Hot Topics in Neuroscience, Chair: Larry Young

12:00 pm—1:00 pm  Lunch (On your own)

Plan to attend

The 4th Annual Meeting for Society for Social Neuroscience, December 5-8, in Guangzhou, China
Visit www.s4sn.org for more information
**Symposium 2: The role of the opioid system for social reward and affiliation**, Chair: Siri Leknes

1:00 pm—1:30 pm  S2.1 Jaak Panksepp, “A historical synopsis of the opioid-addiction theory of social attachments.”

1:30 pm—2:00 pm  S2.2 Christina Barr, “Mu opioid receptor gene variation predicts individual differences in social behaviors in rhesus macaques.”

2:00 pm—2:30 pm  S2.3 David Hsu, “The mu-opioid system response to social rejection and acceptance: human PET studies.”

2:30 pm—3:00 pm  S2.4 Morten Kringelbach, “Greatest love of all? The functional neuroanatomy of social relationships.”

3:00 pm—3:10 pm  Discussion

3:10 pm—3:30 pm  Coffee Break, Sapphire Ballroom A

**Symposium 3: The Joys and Sorrows of Social Relationships**, Chair: Jean Decety

3:30 pm—4:00 pm  S3.1: Mary-Frances O’Connor, “Neural and physiological consequences of social loss: the model of bereavement.”

4:00 pm—4:30 pm  S3.2: Greg Norman, “The influence of social isolation and social support on stress responses.”

4:30 pm—5:00 pm  S3.3: Larry Young, “Neural mechanisms of behavioral responses to parental neglect and loss of partner in monogamous prairie voles.”

5:00 pm—5:30 pm  S3.4: James Coan, “Social regulation of the neural response to threat.”

5:30 pm—5:40 pm  Discussion

6:00 pm—8:00 pm  Poster Session, Sapphire Ballroom A
The subcortical spark of charity

Brian Knutson, PhD, Psychology and Neuroscience, Stanford University

Over the past decade, neuroimaging research has implicated subcortical as well as cortical circuitry in anticipation of gain and loss, as well as choice. More recent work implicates these same circuits in social valuation, and potentially in prosocial behavior. We combined functional magnetic resonance imaging (FMRI) with a charitable giving task to determine which neural and psychological mechanisms could account for the “identifiable victim effect,” or peoples’ tendency to give more to identified versus anonymous strangers. Behaviorally, subjects gave more to orphans depicted by photographs than silhouette, and this effect was mediated by photograph induced feelings of positive arousal. Neurally, although presentation of photographs versus silhouettes elicited widespread neural activity, only increased nucleus accumbens activity could account for increased donations. These findings suggest that identifiable information can recruit positive arousal and nucleus accumbens activity, which promote giving. Thus, affect elicited by identifiable information may compel people to give more to strangers, even in the face of costs to the self.


Symposium 1  
Empathy and Caring  

Friday, November 8, 9:30—11:55am, Room 410  
Chair: Larry Young, Emory University, USA

ABSTRACTS

What we have learned about empathy and what we haven’t?  
Jean Decety, University of Chicago

Our emotions connect us to one another, but it is our caring about others’ emotions that promotes interpersonal bonds. Empathy can motivate helping others in distress; plays an essential role in inhibiting aggression, and facilitates cooperation between members of a similar species. I will begin by discussing how sensitivity to others’ needs has evolved in the context of parental care in mammalian species. Then I will examine the neurobiological mechanisms supporting its operation in humans and show that empathy is facilitated by multiple physiological, hormonal and brain systems. Functional neuroimaging studies focusing on the perception of others’ physical pain and social distress will be presented in support of the adaptive function of empathy in social interactions. Activation in brainstem, amygdala, insula, anterior cingulate cortex and orbitofrontal cortex is modulated by situational contexts and personal characteristics. These studies demonstrate that the incoming sensory information is constrained and filtered by non-conscious appraisal processing, which shapes the emergence of the experience of empathy and behavioral outcomes such as caregiving. Finally, I will address the greater questions that remain in the study of the social neuroscience of empathy in humans, and make the case for the necessity of translational animal models.

Their pain gives us pleasure: Understanding empathic failures and counter-empathic responses in intergroup contexts  
Mina Cikara, Carnegie Mellon University

Despite its early origins and adaptive functions, empathy is not a universal response: failures of empathy are particularly likely for socially distant targets, such as members of different social or cultural groups. In the first two experiments, we characterize this intergroup empathy bias as a function of the relational structure between groups; in the remaining four experiments we explore how changing group allegiance, status, and the boundary between “us” and “them” affects empathic and counter-empathic responses. When teams are set in direct competition, affective responses are characterized not only by less empathy toward out-group members but also by increased counter-empathic responses (i.e., Schadenfreude and Gluckschmerz; Experiment 1). Comparing the in-group and out-group to unaffiliated targets suggests that intergroup empathy bias may be better characterized as out-group antipathy than extraordinary in-group empathy (Experiment 2). Intergroup empathy bias is extremely flexible—the bias completely reverses after participants switch teams (Experiment 3)—but also robust to changes in group status—feedback indicating that the out-group is less threatening, or no longer a threat does not reduce the bias (Experiments 4a and 4b). Nevertheless, providing visual cues of reduced in-group and out-group cohesion can significantly attenuate intergroup empathy bias (Experiment 5).

Young Investigator Contributions: Empathy in animal models  
Chair: Jean Decety, University of Chicago

ABSTRACTS

Neural mechanisms of empathetic behavior in monogamous prairie voles  
James Burkett, Emory University, Atlanta, GA

Consolation is a common human expression of sympathy or compassion. However, consoling behavior has now been observed in several animal species, including some great apes, canids, corvids, and elephants. The vast majority of existing consolation studies in animals have used natural observation, and no laboratory model has been established. Here I present the first experimental data showing that male prairie voles (Microtus ochrogaster) express consoling behavior under laboratory conditions. Males significantly increase their partner-directed allogrooming toward stressed female partners, as compared to baseline and to unstressed controls. Promiscuous meadow voles do not show this stress-evoked increase. Prairie males who observe their stressed partners show an increase in self-grooming and an elevation of plasma corticosterone that is highly correlated to the corticosterone of their female partner, suggesting that consolation is based on an empathy mechanism. Finally, injection of an oxytocin receptor antagonist (OTA) into the cerebral ventricle prevents the stress-evoked increase in allogrooming. We are also exploring the role of OTA in specific brain regions in modulating consolation, as well as the effect of familiarity. These experiments are the beginning of a foundation for an animal model that will inform us about the neurobiology of consolation and empathy.

Empathic helping in rats and its modulation by social parameters  
Inbal Ben-Ami Bartal, University of Chicago

Empathy, the recognition and sharing of affective states between individuals, is an adaptive response with ancient evolutionary roots. It has been clearly established that rodents show simple forms of empathy after witnessing a distressed conspecific. The Empathic Helping paradigm established in our lab shows that rats are also motivated to end that distress by helping a cagemate in need.
Thus, rats learned to release a cagemate trapped in a restrainer, even when social reward was prevented. When offered a choice between helping a cagemate and accessing chocolate chips, rats opened both restrainers and typically shared the chocolate. From these studies it is unclear if rat pro-sociality is extended to strangers. Helping others is costly and resource depleting, and should thus be discriminately extended. In humans, the expression of empathically motivated pro-social behavior is dependent on social context and group membership, where individuals are more motivated to help in-group members than out-group members. Existing evidence in animals suggests that empathy is evoked preferentially by familiar others, and thus a pro-social bias for familiar others was predicted. To investigate this question, current work is exploring the effect of social factors like familiarity and similarity on the expression of empathic helping in rats.

Hot Topics in Social Neuroscience
Chair: Larry Young, Emory University, USA

ABSTRACTS

Social reward requires coordinated activity of nucleus accumbens oxytocin and serotonin
Gül Dölen, M.D., Ph.D, John’s Hopkin’s University.

Social behaviors in species as diverse as honey bees and humans promote group survival but often come at some cost to the individual. Although reinforcement of adaptive social interactions is ostensibly required for the evolutionary persistence of these behaviors, the neural mechanisms by which social reward is encoded by the brain are largely unknown. Evidence that in mice oxytocin (OT) acts as a social reinforcement signal within the nucleus accumbens (NAc) core, where it elicits a presynaptically expressed long-term depression of excitatory synaptic transmission in medium spiny neurons will be presented. Although the NAc receives OT receptor-containing inputs from several brain regions, genetic deletion of these receptors specifically from dorsal raphe nucleus, which provides serotonergic (5-HT) innervation to the NAc, abolishes the reinforcing properties of social interaction. Furthermore, OT-induced synaptic plasticity requires activation of NAc 5-HT1b receptors, the blockade of which prevents social reward. These results demonstrate that the rewarding properties of social interaction in mice require the coordinated activity of OT and 5-HT in the NAc, a mechanistic insight with implications for understanding the pathogenesis of social dysfunction in neuropsychiatric disorders such as autism.

SYMPOSIUM 2
The role of the opioid system for social reward and affiliation

Friday, November 8, 1:00 —3:10pm, Room 410
Co-Chairs: Siri Leknes

ABSTRACTS

A Historical Synopsis of the Opioid-Addiction theory of Social Attachments.
Jaak Panksepp, Department of Integrative Physiology & Neuroscience, College of Veterinary Medicine, Washington State University

Soon after the first reports of the discovery of opiate receptors in mammalian brains in 1972, we hypothesized that this neurochemical substrate may be the fundamental source of mother-infant social bonding as well as other social attachments. The fertility of this idea was first demonstrated by the robust reductions in separation-induced distress vocalizations in infant dogs, guinea pigs and domestic chickens, with evidence for opioid control of social imprinting in the last species. The work was extended to the neural circuit level through the mapping of the separation-distress (PANIC) circuitry as well as related social affects such as social comfort, proximity seeking, and rough-and-tumble play. At a clinical level, the work was extended to i) development of the first animal-model of autism, with the prescription of opiate antagonists such as naltrexone to facilitate social interactions, and ii) and the advocacy of ‘safe’ opioids, such as buprenorphine, as a treatment for depression, and more recently suicidal ideation. As summarized in this symposium, abundant recent work has confirmed the integral role of endogenous opioids in the brain networks that regulate social processes.

Mu Opioid Receptor Gene Variation Predicts Individual Differences in Social Behaviors in Rhesus Macaques
Christina Barr, NIH/NIAA

Mu-Opioid receptor activation has been demonstrated to underlie the expression of attachment and social behaviors in several model organisms. Mu-Opioid receptor gene (OPRM1) polymorphisms that produce increases in receptor affinity for β-Endorphin have arisen independently in humans and rhesus macaques. We wanted to determine whether OPRM1 genotype predicted individual differences in attachment and social behavior. We found that macaque infants carrying the functional OPRM177G allele were more securely attached and that they exhibited a more persistent distress response to maternal separation and increased preference for maternal contact upon reunion. OPRM1 genotype also predicted variation in maternal behavior, especially in response to separation from an infant. Adolescent males carrying the OPRM177G allele were more likely to approach when presented with an unfamiliar conspecific. In the human sample, OPRM1-118G allele carriers reported more enjoyment of parent-child interactions and lower levels of separation anxiety. The OPRM1 genotype-mediated traits and behaviors described here could be adaptive in certain environmental contexts, pointing to the importance of parallel and independent evolution of functional OPRM1 variants across species. We will discuss how our findings lend support to ethological arguments in favor of attachment theory and its association with human psychopathology, through common underlying genetic and neurobiological substrates.
The mu-opioid system response to social rejection and acceptance: human PET studies
David T. Hsu, Ph.D., University of Michigan, Ann Arbor, MI

Acceptance into groups and intimate relationships is necessary for survival and emotional well-being. Thus, even everyday occurrences of social rejection (when one is not wanted or liked) can cause sadness, anxiety and social withdrawal. It has been known since the 1980s that the endogenous brain opioids, which alleviate physical pain, also alleviate social separation distress in several animal species. Animal studies also show that brain opioids mediate pro-social behaviors such as play. In humans, it was hypothesized that the opioid system, particularly through the μ-opioid receptors (MORs), may be involved in regulating the responses to social rejection and acceptance. I will present data showing that in healthy human volunteers, social rejection and acceptance activates the MOR system, using a MOR radiotracer combined with positron emission tomography. These activations were associated with behaviors suggesting that the opioid system “dampens” negative emotions during rejection, and increases social motivation during acceptance. I will also present preliminary data showing that those with major depressive disorder have an altered MOR response, suggesting a hindered ability to respond appropriately to the social environment, and perhaps contributing to the onset/maintenance of this disorder.

Greatest love of all? The functional neuroanatomy of social relationships
Morten Kringelbach, Aarhus University, Denmark.

Our species is inherently social, together with other fundamental rewards (food and sex), help ensure our survival. These pleasures follow similar cyclical time courses shaped by wanting, liking and learning brain processes. A general principle of brain organisation is to optimize resource allocation such that rewards are pursued when relevant. This is made possible by intricate brain systems and neurotransmitters (such as dopamine and opioids) helping to modulate state transitions. Here I will review the recent progress in understanding the early parent-infant relationship which is an important template for social relationships. Parenting depends on specific brain networks that are largely conserved across species and in place even before parenthood. Efforts to understand the neural basis of parenting in humans have focused on the overlapping networks implicated in reward and social cognition, within which the orbitofrontal cortex (OFC) is considered a crucial hub. I will examine emerging evidence that the OFC may be engaged in several phases of parent-infant interactions, from early, privileged orienting to infant cues, to ongoing monitoring of interactions and subsequent learning. This may in turn lead to novel insights into the systems for social reward and affiliation.

ABSTRACTS

Neural and Physiological consequences of social loss: the model of bereavement
Mary-Frances O’Connor, University of Arizona

What do we lose when we lose a loved one? Social relationships are predicated on internal working models of our loved ones, and of working models of us in relationship to those loved ones. When the person dies, both the “other” and the “self” must be re-evaluated, to accommodate the new information into our working models. This mental function is heavily reliant on the posterior cingulate cortex, a nexus for memory and emotion. What happens when we don’t adaptively accommodate this information about our loss? The term for this condition is Complicated Grief. Attachment to our loved ones is rewarding, and remains rewarding if we have not updated our working models, exemplified by nucleus accumbens activation in a Complicated Grief vs. Noncomplicated Grief comparison. Finally, some individuals may also gain something when they lose a loved one—empathy for others. In an unexpected finding, some participants in one fMRI study assumed that “strangers” in the control condition were deceased loved ones of other study participants. This empathy was an individual difference in neural activation patterns. Bereavement is an excellent model of social interaction, with a range of mental functions exemplified, which can be teased apart through good neuroimaging study designs.

The influence of social isolation and social support on stress responses
Greg Norman, University of Chicago, USA

The past decade has seen an explosion of research into the complex relationship between social factors and health across a wide range of phylogeny. One finding that has emerged from this research is the discovery that an individual’s perceptions of their social environment can have a profound influence on pathophysiological and neurobehavioral processes that range from alterations in gene expression and translation to changes in cognitive processes and motivated behaviors. Here, I present data from a series of studies in human and non-human animals that explore some of the potential mechanisms underlying the influence of social interaction on neurobehavioral and pathophysiological processes. I conclude with a brief discussion of some potential theoretical and experimental challenges to be addressed in future research.

Neural mechanisms of behavioral responses to parental neglect and loss of partner in monogamous prairie voles
Larry Young, Emory University, USA

Studies in monogamous prairie voles are providing insights into the neurochemical mechanisms of social bonding, and the consequences of neglect and social loss. Oxytocin and dopamine interact in the striatum and prefrontal cortex to establish mating-induced pair bonds in both sexes. In a model of neglect, 3 hour daily neonatal isolation impairs adult pair bonding in a subset of female voles. Individual variation in
oxytocin receptor density in the striatum correlates with resilience to neonatal isolation. This suggests that striatal oxytocin signaling induced by parental nurturing can mitigate the impact of brief periods of neglect. In adult pair bonded male prairie voles, loss of partner results in depressive-like behavior, resembling grief or bereavement, which is mediated by corticotropin releasing factor (CRF). CRF receptor (CRFR2) agonists suppress oxytocin secretion in the striatum, and infusion of either CRFR2 antagonist or oxytocin into the nucleus accumbens prevents social-loss induced depression. This CRF induced negative affect following separation from the partner is reminiscent of withdrawal from drugs of abuse, and may serve to maintain social relationships after the reinforcing nature of the bond has diminished.

Social Regulation of the Neural Response to Threat
James Coan, University of Virginia

Social proximity, peer bonding and soothing behaviors facilitate the development of non-anxious temperament, attenuate cardiovascular arousal, inhibit the release of stress hormones, reduce threat-related neural activation and may even extend the life-span.

Conversely, social subordination, rejection and isolation are powerful sources of emotional stress. Data from our own laboratory suggests proximity romantic partners, friends and parental caregivers attenuate many of the brain’s responses to threat cues. Although many neural mediators of these and similar effects have been proposed, few have been unequivocally identified. For this talk, I will review candidate mechanisms, the evidence for and against these mechanisms, and introduce Social Baseline Theory, which offers a novel approach to integrating the diverse literature on the neural systems supporting social affect regulation.

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**S4SN 2013 Pre-SfN Meeting | Poster Session**

**Friday, November 8, 2013, 6:00 - 8:00 pm, Sapphire Ballroom A**

The Poster session is scheduled for Friday in the Sapphire Ballroom A of the Hilton San Diego Bay Front Hotel. All attendees must present their S4SN 2013 name badge to enter Sapphire Ballroom A. Please do not leave personal items in the poster room. The presenting author must be present during the assigned session. You may post your materials on the board assigned to you at any time after 10:30 am (listed below), but before the beginning of the assigned poster session. You must remove your poster promptly no later than the time listed above in “Take-down Complete.” Any posters left after take-down complete may be removed and discarded.

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To view full abstracts please visit: [http://www.s4sn.org/poster-schedule-2013](http://www.s4sn.org/poster-schedule-2013)

**Poster Session A**

Friday, November 8, 2013, 6:00 - 8:00 pm,
Sapphire Ballroom A

A1 Electrophysiological activity in medial prefrontal cortex and nucleus accumbens differs across social behaviors in monogamous prairie voles. EA Amadei¹, AC Shpiner², LJ Young³, RC Liu⁴, Georgia Tech and Emory University¹, Emory University²

Keywords: functional connectivity, prairie voles, electrophysiology

A2 Motor Expertise and Tango: Behavioral and neurophysiological correlates of action comprehension and anticipation. Lucía Amoroso¹, ², ⁴, Juan Cardona¹, ², ⁴, Juan Kamienkowsky², ³, Lucas Sedeño¹, ², ⁴, Ailín Tomio¹, David Huepe⁵, Esteban Hurtado², Mariano Sigman², ³, Miguel Angel Alvarez Gonzalez⁶, Facundo Manes¹, ², ⁴, Agustin Ibañez¹, ², ³, ⁴, ⁵, ⁶ Institute of Cognitive Neurology (INECO) and Institute of Neuroscience, Favaloro, Favaloro University, Buenos Aires, Argentina, ²National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina, ³Laboratory of Integrative Neuroscience, Physics Department, University of Buenos Aires, Buenos Aires, Argentina, ⁴UDP-INECO Foundation Core on Neuroscience (UIFCoN), Diego Portales University, Santiago, Chile, ⁵Catholic University of Chile, Santiago, Chile, ⁶University of Design (ISDi), Ciudad de La Habana, Cuba

Keywords: Action comprehension, Action anticipation, Motor Expertise
A3  Neuroanatomical correlates of general self-efficacy: a voxel-based morphometry study Ryuta Aoki, Ayaka Sugira, Yukihito Yomogida, Madoka Matsumoto, Kou Murayama, Keise Izuma, Kenji Manes1, Brain Science Institute, Tamagawa University, Tokyo, Japan, 2Japan Society for the Promotion of Science, Tokyo, Japan, 3The University of Tokyo, Tokyo, Japan, 4UCLA, Los Angeles, CA, 5Caltech, Pasadena, CA

Keywords: emotion regulation; amygdala; voxel-based morphometry

A4  Tracking cognitive and social skills in early neurodegeneration: The type III Cockayne Syndrome Sandra Baez, Blas Couto, Eduar Herrera, Yamile Bocanegra, Natalia Trujillo-Orrego, Juan Cardona, Facundo Manes, Agustin Ibanez, Andres Villegas, Institute of Cognitive Neurology (INECO) & Institute of Neuroscience, Favaloro University, Buenos Aires, Argentina, National Scientific and Technical Research Council (CONICET), Argentina, Universidad Autonoma del Caribe, Barranquilla, Colombia, Facultad de Psicologia, Universidad de San Buenaventura, Medellin, Colombia. Grupo de Neurociencias de Antioquia, Universidad de Antioquia, Medellin, Colombia, Neuroscience Research Program, University of Antioquia, Medellin, Colombia, Laboratory of Cognitive Neuroscience, Universidad Diego Portales, Santiago, Chile

Keywords: Cockayne syndrome, ERCC8, social cognition, cognitive profile, executive functions, VBM

A5  Friday, Empathy deficits in behavioral variant of frontotemporal dementia: their relationship to executive functions and other social cognition domains Sandra Baez, Jean Decety, David Huepe, Teresa Torralva, Nora Silvana Vigliecca, Marcela Velasquez, Fabian Ritcher, Facundo Manes, Agustin Ibanez, Institute of Cognitive Neurology (INECO) & Institute of Neuroscience, Favaloro University, Buenos Aires, Argentina, National Scientific and Technical Research Council (CONICET), Argentina, Department of Psychology and Psychiatry, and Center for Cognitive and Social Neuroscience, University of Chicago, Chicago, IL, USA, Laboratory of Cognitive and Social Neuroscience (LaNcYS), UDP-INECO Foundation Core on Neuroscience (UIFCoN), Diego Portales University, Santiago, Chile, Instituto de Humanidades (IDH) de la Facultad de Filosofia y Humanidades, Universidad Nacional de Cordoba

Keywords: Empathy, social cognition, executive functions, frontotemporal dementia

A6  Emotional contagion is required for pro-social behavior in rats Inbal Ben-Ami Bartal, Tess M. Murray, Jasper Z. Williams, Jean Decety, Peggy Mason, University of Chicago

Keywords: empathy rats pro-social corticosterone benzodiazepine

A7  Sex-Specific regulations of social play by vasopressin and oxytocin depends on social context Remco Bredeuweld, Caroline Smith, Kelly Dumais, Alexa Veenema, Neurobiology of Social Behavior Laboratory, Department of Psychology, Boston College, Chestnut Hill, MA, USA

Keywords: social play, sex differences, vasopressin, oxytocin, social context, lateral septum


Keywords: Emotion; tDCS; hemispheric specialization; motor control

A9  Consoling behavior in prairie voles is empathy-based and oxytocin-dependent James P. Burkett, Daniel W. Curry, Melissa V. Reyes, Larry J. Young, Center for Translational Social Neuroscience, Emory University, Atlanta, GA, Graduate Program in Neuroscience, Emory University, Department of Biology, Emory University

Keywords: empathy, consolation, prairie vole, oxytocin

A10  The impact of implicit and explicit prejudice on the neural substrates of race perception Carlos Cardenas-Iniguez, Tianyi Li, Joshua Correll, Jasmin Cloutier, University of Chicago, University of Colorado Boulder

Keywords: Person Perception

A11  When smooth thoughts lead to smooth moves: Cognitive fluency facilitates approach movement and behavior Evan W. Carr, Piotr Winkielman, Mark Rotteveel, University of California, San Diego, Universiteit van Amsterdam

Keywords: EMG; Emotion; Cognition

A12  Value-dependent scaling of self- and other-referenced decisions by neurons in primate amygdala Steve W.C. Chang, Michael L. Platt, Duke University, Yale University

Keywords: Amygdala, Social Decision-Making, Reward, Social Preference, Reward Tuning

A13  The opioid system mediates perceived facial attractiveness and attention to others’ eyes Olga Chelnokova, Bruno Laeng, Jeppe Riegel, Gro Løseth, Marie Ekemo, Siri Leknes, Department of Psychology, University of Oslo, Oslo, Norway

Keywords: face perception, eye-tracking, psychopharmacology, opioid system, reward processing

A14  Carbon Disulfide mediates socially-acquired nicotine self-administration Suzhen Gong, Tengfei Wang, Hao Chen, Department of pharmacology, University of Tennessee Health Science Center

Keywords: addiction; nicotine; social learning
A15 Social trust should activate two different mental processing routes depending if counterparty has an in-group or out-group identity
Carlos C. Contreras-Ibañez1, Silvia Hidalgo-Tobón1, Christian E. Cruz Torres1,2, Benito de Celis3, Javier Velázquez Motezuma1, Roberto E. Mercadillo1,2,1 Universidad Autónoma Metropolitana, Iztapalapa, 2 Universidad Nacional Autónoma de México, 3 Benemérita Universidad Autónoma de Puebla

Keywords: Social trust, Inter-group, Heuristics, Economic game

A16 A double approach model for the integration of interoception, emotions and social cognition processing
Blas Couto1,2,3, Fabian Richter1,4, Lucas Sedeño1,2,3, Facundo Manes1,2, Agustin Ibanez1,2,3,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience, Favaloro, Favaloro University, C1078AAI Buenos Aires, Argentina, 2 UDP-INECO Foundation Core on Neuropsychology (UIFCoN), Diego Portales University, Santiago, Chile, 3 National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina, 4 Department Psychologie, Philosophische Fakultät, Universität der Köln, Deutschland

Keywords: Interoception, social cognition, emotion, lesion, insula

A17 Interoceptive and exteroceptive resting state networks after fronto-insular brain damage
Blas Couto1,2,4, Fabian Richter1,2, Igna García Cordero1, Pablo Battelino1, Margherita Melloni1,2,4, Facundo Manes1,2,4, Agustin Ibanez1,2,4,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience, Favaloro, Favaloro University, C1078AAI Buenos Aires, Argentina, 2 UDP-INECO Foundation Core on Neuropsychology (UIFCoN), Diego Portales University, Santiago, Chile, 3 National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina, 4 Department Psychologie, Philosophische Fakultät, Universität der Köln, Deutschland, 5 Institut National de la Santé et de la Recherche Médicale (INSERM), 91191 Gif sur Yvette, France

Keywords: Interoception, lesion, insula, Functional Connectivity

A18 Graph theory characterization of resting state networks among different macro-states in frontotemporal dementia
Blas Couto1,2,4, Fabian Richter1,5, Igna García Cordero1, Pablo Battelino1, Mariano Sigman1,2,4, Margherita Melloni1,2,4, Facundo Manes1,2,4, Agustin Ibanez1,2,4,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience, Favaloro, Favaloro University, C1078AAI Buenos Aires, Argentina, 2 UDP-INECO Foundation Core on Neuropsychology (UIFCoN), Diego Portales University, Santiago, Chile, 3 Physics Department, Laboratory of Integrative Neuroscience, FCEyN UBA and IFIBA, Conicet, Pabellón 1, Ciudad Universitaria, 1428 Buenos Aires, Argentina, 4 National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina, 5 Department Psychologie, Philosophische Fakultät, Universität der Köln, Deutschland, 6 Institut National de la Santé et de la Recherche Médicale (INSERM), 91191 Gif sur Yvette, France

Keywords: Fronto-temporal dementia, Functional Connectivity, brain macro-states, graph theory

A19 Structural correlates of social cognition in progressive non-fluent aphasia and behavioral variant of frontotemporal dementia
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Keywords: PNFA, bvFTD, theory of mind, voxel-based morphometry, social context network model, fronto-insulo-temporal network

A20 Interoception as the perception of external and internal body signals
Blas Couto1,2,4, Lucas Sedeño1,2,4, Mariano Sigman1,2, Pablo Alvarez-Abu1, Andres Canales-Johnson1, Tristan Bekinschtein1, Facundo Manes1,2,4, Agustin Ibanez1,2,4,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience, Favaloro, Favaloro University, C1078AAI Buenos Aires, Argentina, 2 UDP-INECO Foundation Core on Neuropsychology (UIFCoN), Diego Portales University, Santiago, Chile, 3 Medical Research Council Cognition and Brain Sciences Unit, Cambridge CB2 7EF, United Kingdom, 4 National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina, 5 Universidad Torcuato Di Tella, Almirante Juan Saenz Valiente 1010, Buenos Aires C1428BJU, Argentina

Keywords: Interoception, internal stream, external stream, insula, context, taste, smell, pain

A21 Sub-chronic administration of MDMA leads to changes in murine social behavior
Daniel Curry1, Kevin Murnane2, Meghan Logun1, Leonard Howell1, Yerkes National Primate Research Center, Emory University

Keywords: MDMA, Oxytocin, Serotonin, Sensitization

A22 Predicted quality of life is correlated with alpha asymmetries in frontal and parietal regions of the human brain
Jeff Davis1, California State University at Long Beach

Keywords: Prediction, Social Behavior, EEG

A23 Sex differences in oxytocin receptor binding in the bed nucleus of the stria terminalis and amygdala: Implications for differential expression and regulation of social behavior
Kelly M Dumas1, Andrea G Alonso1, Thomas E Mayer2, Remco Bredewold1, Alexa H Veenema1, Neurobiology of Social Behavior Laboratory, Department of Psychology, Boston College, Chestnut Hill, MA, USA 02467

Keywords: behavioral neuroscience, neuropeptides, sex differences, social behavior, animal models

A24 The µ-opioid system optimizes human reward behavior, a drift diffusion model account
Marie
A25 Investigations of systemic and intrahippocampal estrogens on social learning in female mice  
Kelsy Ervin\textsuperscript{1,2,3}, Erin Muilvai\textsuperscript{1}, Jenna Boyd\textsuperscript{1}, Gregory Montini\textsuperscript{1}, Aytron Melendez\textsuperscript{1}, Anna Phan\textsuperscript{1}, Elena Choleris\textsuperscript{1}, Department of Psychology and Neuroscience Program, University of Guelph, Guelph, Ontario, Canada

Keywords: estrogen receptor, social transmission of food preference, rapid estrogen effects

A26 Late Positive Potential sensitivity to characteristics of social roles  
A.L. Fernandez Cruz\textsuperscript{1}, C.H. Lee\textsuperscript{1}, O. Mohamed Ali\textsuperscript{1}, I. Walpola\textsuperscript{1}, J. B. Debruijle\textsuperscript{1}, McGill University, Cognitive and Social Neurosciences Laboratory, Emory University, Atlanta, GA

Keywords: Social Cognitive Neuroscience

A27 Oxytocin Receptor Expression in the Rhesus Macaque Brain is Restricted to the Ventromedial Hypothalamus, Nucleus Basalis of Meynert, and Superior Colliculus  
Sara Freeman\textsuperscript{1}, Kiyoshi Inoue\textsuperscript{1,2,3,4}, Aaron Smith\textsuperscript{1}, Larry Young\textsuperscript{1}, 1Center for Translational Social Neuroscience, Emory University, Atlanta, GA

Keywords: oxytocin receptor, rhesus macaque, receptor autoradiography, in situ hybridization

A28 The effects of vasopressin in the ventral tegmental area on social behavior are modulated by previous social experience  
Mario Gil\textsuperscript{1,2}, Edward Nguyen\textsuperscript{1}, Ansa Riaz\textsuperscript{1}, H. Elliott Albers\textsuperscript{1,2,3}, Neuroscience Institute, Georgia State University, Atlanta, GA USA, 1Center for Behavioral Neuroscience, Atlanta, GA USA

Keywords: Social behavior, social dominance, aggression, vasopressin, dopamine

A29 Effect of intracranial administration of propranolol on consolidation of conditioned defeat  
Cloe L. Gray\textsuperscript{1}, Alisa Norvelle\textsuperscript{1}, Kim L. Huhman\textsuperscript{1}, Georgia State University

Keywords: Social stress, fear learning, basolateral amygdala

A30 Empathy and justice sensitivity predict prefrontal recruitment during moral decision-making  
Keith Yoder\textsuperscript{1}, Jean Decety\textsuperscript{1}, University of Chicago

Keywords: morality; moral judgment; empathy; justice; brain mapping; cognition;

A31 ANA 12, a Trk B receptor antagonist, increases submission following social defeat in Syrian hamsters  
Elizabeth C. Jeffress\textsuperscript{1}, Kim L. Huhman\textsuperscript{1}, Neuroscience Institute, Center for Behavioral Neuroscience, Georgia State University, Atlanta, GA, USA, 30303

Keywords: BDNF ; SOCIAL STRESS ; FEAR LEARNING

A32 Associations between oxytocin-related genes and autistic-like traits  
Daniel Johansson\textsuperscript{1}, Anna Zettergren\textsuperscript{1}, Lina Jonsson\textsuperscript{1}, Jonas Melke\textsuperscript{1}, Henrik Ankarsäter\textsuperscript{1}, Paul Lichtenstein\textsuperscript{1}, Lars Westberg\textsuperscript{1}, 1University of Gothenburg, 2Karolinska Institute

Keywords: Autism genetics

A33 A SNP in the prairie vole oxytocin receptor gene predicts individual variation in oxytocin receptor density in the nucleus accumbens and pup ultrasonic vocalizations  
Lanikea B King\textsuperscript{1,2,3,4}, Kiyoshi Inoue\textsuperscript{1,2,3,4}, Donald G Rainnie\textsuperscript{1,2,3,4}, Larry J Young\textsuperscript{1}, 1Center for Translational Social Neuroscience, 2Yerkes National Primate Research Center, 3Department of Psychiatry and Behavioral Sciences, 4Emory University

Keywords: Oxytocin receptor, transcription, ultrasonic vocalizations

A34 A centrally-acting melanocortin 4 receptor agonist enhances social cognition in prairie voles (Microtus ochrogaster)  
Kara A. Kittelberger\textsuperscript{1}, Hasse Walum\textsuperscript{1}, Larry J. Young\textsuperscript{1}, Yerkes National Primate Research Center, Emory University, Atlanta GA 30329

Keywords: oxytocin, autism, pair bonding, social attachment

A35 The role of motor and somatosensory cortices in the perception and mimicry of emotional facial expressions – a TMS and EMG study  
Sebastian Korb\textsuperscript{1,2,3}, Jennifer Malser\textsuperscript{1,2}, Vincent Rochas\textsuperscript{1}, Tonia Rihs\textsuperscript{1}, Sebastian Rieger\textsuperscript{1}, Samir Schwab\textsuperscript{1}, Paula Niedenthal\textsuperscript{1}, Didier Grandjean\textsuperscript{1,2,3}, 1University of Wisconsin, Madison, 2University of Geneva, Switzerland, 3Swiss Center for Affective Sciences, Geneva, Switzerland

Keywords: facial mimicry; EMG; TMS; embodiment; motor cortex; somatosensory cortex

A36 Thinking about Seeing: perceptual sources of knowledge are encoded similarly in the theory of mind brain regions of sighted and blind adults  
Jorie Koster-Hale\textsuperscript{1}, Marina Bedny\textsuperscript{1}, Rebecca Saxe\textsuperscript{1}, 1Massachusetts Institute of Technology, 2Johns Hopkins University

Keywords: blindness; theory of mind; experience; representation; fMRI; multivoxel pattern analysis (MVPA)

A37 How does oxytocin affect gaze to the eyes?  
Siri Leknes\textsuperscript{1}, Martin Larsson\textsuperscript{1}, Bruno Laeng\textsuperscript{1}, Lars Westberg\textsuperscript{1}, 1University of Oslo, Norway, 2Gothenburg University, Sweden

Keywords: Social communication, eye-tracking, face perception

A38 Does the Human µ-Opioid System Modulate Preference for Social Touch?  
Guro E. Løseth\textsuperscript{1}, Olga Chelnokova\textsuperscript{1}, Jeppe Riegaels\textsuperscript{1}, Marie Eikemo\textsuperscript{1}, Frode Willoch\textsuperscript{1}, Siri Leknes\textsuperscript{1}, 1University of Oslo

Keywords: Opioids Touch
A40 The role of body signals and subjective experience as panic attack triggers: a comparison among infrequent panicakers, OCD and healthy subjects Lucas Sedeño1,2,3, Margherita Melloni1,2,3, Blas Couto1,2,3, Adrián Yoris1,2, Marcela Velásquez1,2, Ezequiel Mikulski1,2, Marcelo Cetkovich1,2, Liliana Traiber1, Pablo López1, Emilio Compte1, Fernando Torrente1, Rafael Kichic1,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience (Favaloro University), 2 UDP-INECO Foundation Core on Neuroscience (UIFCoN), Diego Portales University, 3 National Scientific and Technical Research Council (CONICET)

Keywords: Anxiety, Panic, Obsessive compulsive disorder (OCD), Emotion, Interception

A41 Selective pharmacological activation of hippocampal G-protein coupled estrogen receptor affects social recognition, object recognition, and object placement in female mice Jennifer Lymer1, Christopher Gabor1, Anna Phan1, Alexandra Magahay1, Nicolette Baines1, Elena Choleris1, 1University of Guelph

Keywords: Behavioural Neuroendocrinology

A42 Elucidating the role of the oxytocin system in specific social behaviors by using an oxytocin agonist and antagonist Caleb Wood1, Michael Gregg1, Hannah Sample1, Jocelyn Reyes1, Loren Martin1, 1Azusa Pacific University

Keywords: oxytocin, mouse, motivation, social behavior

A43 Dopamine, social learning, and food intake: The effects of hippocampal dopamine D1-type receptor blockade with SCH23390 in the social transmission of food preferences in male and female mice. Richard Matta1, Angela N Tiessen1, Elena Choleris1, 1University of Guelph, Department of Psychology and Neuroscience Program, Guelph, Ontario, Canada

Keywords: Dopamine, social learning, hippocampus, CA1, feeding, mice, sex differences

A44 Social recognition in male and female Syrian hamsters Katharine E. McCann1, Alisa Norvelle1, H. Elliott Albers1, Kim L. Huhman1, 1Neuroscience Institute, Center for Behavioral Neuroscience, Georgia State University

Keywords: Social stress; conditioned defeat; flank marking

A45 The effect of antipsychotics and schizotypy on slow positive waves evoked by social information Ola Mohamed Ali1, Alec Berman1, Armen Slikhianian1, Ana L. Fernandez Cruz1, Ishan Walpola1, Bruno Debruille1, 1McGill University, 2Oberlin College

Keywords: schizotypy, slow positive wave, antipsychotics

A46 Toward a deeper characterization of the social phenotype of Williams syndrome: the association between personality and social drive Rowena Ng1,2, Anna Jarvinen1, Patricia Fillet1, Ursula Bellugi1, 1Salk Institute for Biological Studies; Laboratory for Cognitive Neuroscience, 2University of Minnesota Twin Cities; Institute of Child Development

Keywords: Social Development, Neurodevelopmental disorders, Williams syndrome, Social-emotion

A47 Vasopressin Effects on Behavioral Responses to Same- and Other-Sex Faces in Men Richmond Thompson1, James Rilling2, Daniel Price3, Bowdoin College, 2Emory University, 3Maine Medical Center–Tufts University

Keywords: Vasopressin

A48 The influence of socio-spatial experience on dynamics of oxytocin receptor development in the prairie vole George Prounis1, Alexander Ophir1, 1Cornell University

Keywords: oxytocin, neuroplasticity, neurodevelopment, environmental enrichment

A49 Tuning eye-gaze perception by transitory inhibition of the ior STS Ana Saitovitch1, Traian Popa1, Hervé Lemaître1, David Grévent1, Raphael Calmon1, Sabine Meunier1, Nadia Chabane2, Francis Brunelle2, Yves Samson2, Nathalie Boddaert2, Monica Zilovic2,1 Unité INSERM 1000, Service de Radiologie Pédiaétrique, Hôpital Necker Enfants Malades, AP-HP, 149 rue de Sèvres 75015, Paris France., 2Centre de Neuroimagerie de Recherche (CENIR), Institut du Cerveau et de la Moelle Épinière (ICM), 75013 Paris, France, 3Service de Pédiatrie, Hôpital Robert Debré, AP-HP, 48 Boulevard Sévérin, 75019 Paris, France., 4Service des Urgences Cerebro-Vasculaires, Groupe Hospitalier Pitié-Salpêtrière, AP-HP, Université Paris VI Pierre et Marie Curie, 49, bd de l’hôpital 75013, Paris, France

Keywords: Social perception, TMS, Brain imaging, STS

A50 Between flesh and brain: Interception, functional connectivity and empathy processing in a patient with Depersonalization Disorder Lucas Sedeño1,2,3, Blas Couto1,2,3, Margherita Melloni1,2,3, Andrés Canales-Johnson1,2,3, Adrián Yoris1,2, Marcela Velásquez1,2, Ezequiel Mikulski1,2, Marcelo Cetkovich1,2, Liliana Traiber1, Pablo López1, Emilio Compte1, Fernando Torrente1, Rafael Kichic1,1 Institute of Cognitive Neurology (INECO) and Institute of Neuroscience (Favaloro University), 2 UDP-INECO Foundation Core on Neuroscience (UIFCoN), Diego Portales University, 3 Medical Research Council Cognition and Brain Sciences Unit, 4 Laboratory of Integrative Neuroscience, FCEyN UBA and IFIBA, 5 National Scientific and Technical Research Council (CONICET), 6 Institut National de la Santé et de la Recherche Médicale (INSERM), 7 Universidad Torcuato Di Tella

Keywords: Interception, Depersonalization Disorder, Functional Connectivity, Empathy

A51 ERP evidence of automatic trust evaluations Danielle M Shore1, Thomas J Dishion1, Debra L Mills1, 1Arizona State University, 2Bangor University
A52 The Oxytocin Receptor Gene and Interpersonal Stress: Exploring Associations with Conduct Problems and Antisocial Behaviors
Erica L. Smearan1,2, D. Anne Winiasri3, Patricia A. Brennan3, Katrina C. Johnson4, 1Department of Behavioral Sciences and Health Education, Emory University Rollins School of Public Health, 2Medical Scientist Training Program, Emory University School of Medicine, 3Department of Psychology, Emory University, 4Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine

Keywords: Trust, Social Evaluation

A53 Role of opioids, oxytocin, and stress in modulating social novelty-seeking behavior in the juvenile rat
Caroline J.W. Smith1, Jazmin N. Mogavero1, Kevin B. Wilkins2, Kayla I. Reardon3, Remco Breddewold4, 1Neurobiology of Social Behavior Laboratory, Department of Psychology, Boston College, Chestnut Hill, MA USA

Keywords: stress, oxytocin, juvenile, novelty-seeking

A54 Investigating the Interaction Between Ecstasy (MDMA) User Status and Affective Touch
Sharon Smith1, Rebecca Wynne2, Samuel Reavey3, Jayne Shaw2, Leah Cunningham4, Conor McGlone5, 1Liverpool John Moores University

Keywords: Affective touch, MDMA

A55 Intrasinal oxytocin modulates attention to social stimuli in rhesus macaques
James A. Solyst1,2,3, Elizabeth A. Buffal1,2,3, 1Yerkes National Primate Research Center, Atlanta, GA, USA, 2Neuroscience Graduate Program, Emory University, Atlanta, GA, USA, 3Center for Translational Social Neuroscience, Emory University, Atlanta, GA, USA

Keywords: Oxytocin, monkey, attention, memory, eye-tracking

A56 Oxytocin Induces Social Communication in Male Syrian Hamsters by Activating V1a and not OT Receptors
Z. Eric Song1, Katharine E MacCann1, John K IV McNeill1, Kim L Huhman1, H. Elliott Albers1, 1Center for Behavioral Neuroscience, Georgia Stat University, Atlanta, GA

Keywords: prosocial behavior, vasopressin (AVP), flank marking

A57 An Intact Cortical Network for Theory of Mind in Three Patients with Bilateral Amygdala Lesions
Robert Spunt1, Jed Elison2, René Hurleman3, Ralph Adolphs4, 1California Institute of Technology, 2University of Minnesota, 3University of Bonn

Keywords: theory of mind, mentalizing, amygdala, social cognition, lesion

A58 Emotional face-processing in depressed and anxious adolescents: A longitudinal fMRI study investigating time and treatment related changes in brain activation
B. G. van den Bulk1,2,3, J. Cousijn2, N.D.J. van Lang1,5, N.J.A. van der Wee2,3, S.A.R.B. Rombouts2,3, E.A. Crone2,3, R.R.J.M. Vermeiren5, 1Curium-LUMC, Oegstgeest, the Netherlands, 2Leiden University, the Netherlands, 3Leiden Institute for Brain and Cognition, the Netherlands

Keywords: emotional face processing / depression / anxiety

A59 Contributions of genetic polymorphisms and neonatal experience to retrosplenial V1aR in prairie voles, Microtus ochrogaster
Gerard N. Wallace1, Maryam Okhovat2, Zahra Dehghan3, Alejandro Berrio Escobar4, Steve Phelps1, 1The University of Texas at Austin

Keywords: Vole, V1aR, Retrosplenial Cortex

A60 Association between an oxytocin receptor gene variant and face recognition as well as related amygdala activation
Lars Westberg1, Anna Zettergren1, Johanna Lovén2, Joakim Svärd2, Johanna Målding1, Daniel Johansson1, Nathalie Ebner2, Håkan Fischer3, 1University of Gothenburg, 2Stockholm University, 3University of Florida, 4Karolinska Institute

Keywords: Social neuroscience, genetics

A61 Being rejected and taking revenge: Neural correlates of punishing initiators of social exclusion during adolescence
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Keywords: Social exclusion, social decision-making, fMRI, adolescence, development
Plan to attend
The 4th Annual Meeting for Society for Social Neuroscience, December 5-8, in Guangzhou, China
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