



Special Interest Research Group

# SoNeAt

Social Neuroscience of Human Attachment

SoNeAt Virtual Conference Workshop 2020

# 70 Years of Attachment Research: A Multidisciplinary Social Neuroscience Perspective

Society for  
Emotion and  
Attachment  
Studies



Baruch Ivcher School  
of Psychology



# **Extended Preliminary Schedule**

*Version 1.0*

## Schedule Overview

Wednesday, August 12

| Time BST      | Time IDT      | Topic / Speaker(s)   | Format                     |
|---------------|---------------|--|----------------------------|
| 09:00 – 09:15 | 11:00 – 11:15 | <b>Welcome &amp; Introduction Day 1</b><br>Tsachi Ein-Dor & Pascal Vrtička | 15 min session             |
| 09:15 – 10:15 | 11:15 – 12:15 | <b>Keynote 1</b><br>Mario Mikulincer                                       | 45 min talk + 15 min Q&A   |
| 10:15 – 10:45 | 12:15 – 12:45 | <b>Coffee Break</b>  | 15 min break               |
| 10:45 – 11:45 | 12:45 – 13:45 | <b>Keynote 2</b><br>Pascal Vrtička   | 45 min talk + 15 min Q & A |
| 11:45 – 13:00 | 13:45 – 15:00 | <b>Plenary Oral Presentation Session 1</b><br>Talks A - E                  | 12 min talks + 3 min Q&A   |
| 13:00 – 14:00 | 15:00 – 16:00 | <b>Lunch break</b>   | 60 min break               |
| 14:00 – 15:00 | 16:00 – 17:00 | <b>Keynote 3</b><br>Ashley Groh  | 45 min talk + 15 min Q & A |
| 15:00 – 16:00 | 17:00 – 18:00 | <b>Keynote 4</b><br>Kristin Bernard  | 45 min talk + 15 min Q & A |
| 16:00 – 16:15 | 18:00 – 18:15 | <b>Concluding Remarks Day 1</b><br>Tsachi Ein-Dor & Pascal Vrtička         | 15 min session             |
| 16:15 – 16:30 | 18:15 – 18:30 | <b>Coffee Break</b>  | 15 min break               |
| 16:30 – 17:30 | 18:30 – 19:30 | <b>Virtual Poster Room Presentations 1</b><br>Posters 01 - 10              | 60 min session             |

Thursday, August 13

| Time BST      | Time IDT      | Topic / Speaker (s)  | Duration                   |
|---------------|---------------|--|----------------------------|
| 09:00 – 09:15 | 11:00 – 11:15 | <b>Welcome &amp; Introduction Day 2</b><br>Tsachi Ein-Dor & Pascal Vrtička | 15 min session             |
| 09:15 – 10:15 | 11:15 – 12:15 | <b>Keynote 5</b><br>Anne Rifkin  | 45 min talk + 15 min Q&A   |
| 10:15 – 10:45 | 12:15 – 12:45 | <b>Coffee Break</b>  | 15 min break               |
| 10:45 – 11:45 | 12:45 – 13:45 | <b>Keynote 6</b><br>Tsachi Ein-Dor   | 45 min talk + 15 min Q & A |
| 11:45 – 13:00 | 13:45 – 15:00 | <b>Plenary Oral Presentation Session 2</b><br>Talks F - J                  | 12 min talks + 3 min Q&A   |
| 13:00 – 14:00 | 15:00 – 16:00 | <b>Lunch break</b>   | 60 min break               |
| 14:00 – 15:00 | 16:00 – 17:00 | <b>Keynote 7</b><br>Nicole Letourneau & Sarah Merrill                      | 45 min talk + 15 min Q & A |
| 15:00 – 16:00 | 17:00 – 18:00 | <b>Keynote 8</b><br>Cheri Marmarosh  | 45 min talk + 15 min Q & A |
| 16:00 – 16:15 | 18:00 – 18:15 | <b>Concluding Remarks Day 2</b><br>Tsachi Ein-Dor & Pascal Vrtička         | 15 min session             |
| 16:15 – 16:30 | 18:15 – 18:30 | <b>Coffee Break</b>  | 15 min break               |
| 16:30 – 17:30 | 18:30 – 19:30 | <b>Virtual Poster Room Presentations 2</b><br>Posters 11 – 20              | 60 min session             |

### KEYNOTE 1

12 August 2020 – 09:15 to 10:15 BST



### **Attachment Theory as a Conceptual Framework for Studying Species-Universal and Individual-Differences Aspects of the Social Mind**

Mario Mikulincer  
Interdisciplinary Center (IDC) Herzliya (Israel)

In this lecture, I present the core construct in attachment theory – behavioral system – and evaluate its usefulness for studying species-universal and individual-differences aspects of social motives, cognitions, and behaviors and understanding the evolutionary basis of social behavior, interpersonal relations, and group processes. I begin by explaining the behavioral systems construct, including its evolutionary basis and its species-universal and individual-differences aspects, which interact with social situations to shape social behavior. Next, I discuss the behavioral systems studied to date: attachment, exploration, caregiving, sex, and power, while trying to understand their dynamic interplay in shaping personality and social behavior. I place more emphasis on the attachment system than on the other behavioral systems because it has received more research attention, but I also summarize new research related to the other behavioral systems.

## KEYNOTE 2

12 August 2020 – 10:45 to 11:45 BST



### **Towards a Social Neuroscience of Human Attachment**

Pascal Vrtička

University of Essex (UK)

In 1992, John Cacioppo and Gary Berntson for the first time described social neuroscience as a new field at the interface of (social) psychology and neurobiology with the aim of revealing the biological and particularly neural underpinnings of human social behavior. Already in the first description of social neuroscience, mother-infant attachment and early childhood experiences were mentioned as core constituents of human social behavior, which highlights the intrinsic connection of social neuroscience with attachment theory. The above said, most social neuroscience investigations into human interactions and relationships have so far only indirectly referred to attachment theory. Consequently, there has been a lack of a comprehensive framework of the social neuroscience of human attachment. Building upon first considerations published in 2012, we recently proposed a refined functional neuro-anatomical model of human attachment (*NAMA*), and are currently extending it to disrupted / disorganized attachment (*NAMDA*). In the first part of my talk, I will describe the underlying considerations and most consistent predictions emerging from *NAMA* and *NAMDA*. In the second part of my talk, I will show that social neuroscience is presently undergoing an important transition from first- to second-person paradigms emphasizing the need to investigate interpersonal processes during direct social interaction. I will provide concrete examples of this transition by presenting new findings from our own functional near-infrared spectroscopy (fNIRS) hyperscanning studies looking at bio-behavioural synchrony and inter-brain coherence in parents and their young children. Altogether, I hope that my talk will illustrate how a better conceptualization of attachment processes by means of *NAMA* and *NAMDA* and the addition of second-person paradigms can advance attachment theory and research within the 21<sup>st</sup> century.

### KEYNOTE 3

12 August 2020 – 14:00 to 15:00 BST



### **The Neurobiology of Parent-Child Attachment Relationships**

Ashley M. Groh

University of Missouri (USA)

There has been a rapid increase in research on the neurobiological correlates of attachment. Indeed, this growing body of research has resulted in additional chapters to the *Handbook of Attachment* specifically dedicated to the neuroscience of attachment (Coan, 2008, 2016; Ehrlich et al., 2016; Fox & Hane, 2008; Hane & Fox, 2016). Given the centrality of parent-child relationships to attachment, it is perhaps no surprise that the significance of adult attachment for neurobiological responding integral to parent-child relationships figures prominently in this literature. In this talk, I will present findings from my research that have provided evidence for the role of the legacy of attachment-relevant experiences as reflected in parents' representations of attachment in contributing to the neurobiology of parenting. Specifically, presented findings from several studies will provide evidence that parents' attachment representations contribute to their central (EEG, ERP) and peripheral autonomic (SCL, RSA) physiological responding to infant stimuli and while interacting with their infant. Findings across studies provide insight into potential underlying mechanisms by which parents' attachment representations contribute to parenting behavior and the quality of parent-child attachment. Further, findings will be discussed in relation to the strengths and limitations of neurobiological methods and how they might be successfully leveraged to advance attachment research.

## KEYNOTE 4

12 August 2020 – 15:00 to 16:00 BST



### **Early Life Stress, Attachment, and Neurobiology: A Translational Approach to Intervention**

Kristin Bernard

State University of New York at Stony Brook (USA)

Children who experience early adversity, such as neglect, abuse, and disruptions in care, are at high risk for later problems across socioemotional, behavioral, and physical health domains. Importantly, sensitive parenting can buffer children from maladaptive outcomes by protecting against neurobiological consequences of early adversity. This talk will explore how early life stress influences children's neurobiological development and how optimal caregiving and preventative interventions may buffer at-risk children from problematic outcomes. Specifically, several studies will be presented that examine: (1) the effects of early adversity on children's neurobiology, (2) the protective role of responsive caregiving for children living in chronically challenging conditions, and (3) the effectiveness of an attachment-based parenting program for children at risk for maltreatment. Together, findings from these studies highlight the importance of translational, inter-disciplinary research for identifying and serving the needs of children who face early adversity.

## KEYNOTE 5

13 August 2020 – 09:15 to 10:15 BST



### **Neuroimaging of Parenting and Attachment: What's Known? What's the Value of Knowing?**

Anne Rifkin-Graboi

National Institute of Education, Nanyang Technological University (Singapore)

Attachment theory has always been the product of cross disciplinary thinking, influenced by biological research. Yet, only within the last decade have we really begun to investigate the neural precursors, correlates, and consequences of parenting and attachment. In this talk I will review a selection of imaging findings and discuss what they do *and* do not tell us. This talk will also consider whether such investigations have practical value to fields like psychiatry and education, over and above their basic contribution to scientific knowledge.



## KEYNOTE 6

13 August 2020 – 10:45 to 11:45 BST



### **The genetic and epigenetic search for attachment and human sociability**

Tsachi Ein-Dor

Interdisciplinary Center (IDC) Herzliya (Israel)

The most prominent psychological theory and research field on the development and maintenance of our social mind is Bowlby's attachment theory (Bowlby, 1982). According to attachment theory, different nurturing environments prime the development of distinct, albeit adaptive, personality-like dispositions that in turn associate with various social tendencies such as the need for closeness, caring, helping others, and regulating emotions. Although psychological research provides rich and insightful understanding of attachment patterns, most of the individual differences in these patterns (i.e. variance between people) remain unexplained by nurture alone. A decade and a half ago, animal models began exploring the possible genetic and epigenetic makeup of early development and its effect on attachment and sociability. In my talk, I will present the genetic and epigenetic research on attachment patterns and discuss the possibilities and challenges of these lines of research.

## KEYNOTE 7

13 August 2020 – 14:00 to 15:00 BST



### **DNA methylation in early infancy associates with later attachment organisation and security**

Sarah Merrill & Nicole Letourneau  
University of Calgary (Canada)

A central proposition of Bowlby's ethological attachment theory is that attachment is integral to human behaviour throughout the lifespan, "from the cradle to the grave". Similarly, our current understanding of DNA methylation (DNAm) is also one of biological programming and predisposition through the developmental origins of early life environments. As of yet, there is a dearth of explorations into the potential biological embedding of environments related to attachment and no studies examining this relationship before a behavioural attachment pattern is assessed. Therefore, we analysed the association between DNAm and eventual attachment pattern in the attachment-in-the-making phase of early life. Findings demonstrate association between DNAm at 3 months in peripheral tissue and later attachment pattern. Moreover, the identified links between CpG sites and attachment pattern suggest a potential pathway to explain the compromised immune function and mental health challenges that present in children and adults with insecure or disorganised attachment patterns.

KEYNOTE 8

13 August 2020 – 15:00 to 16:00 BST



**Attachment and Psychotherapy:  
How Individual and Group Psychotherapy Influence Change**

Cheri Marmarosh  
George Washington University (USA)

Dr. Marmarosh will present contemporary theory and empirical research demonstrating how patient attachment styles influence treatment in both individual and group psychotherapy. She will explore how treatment influences changes in attachment including changes in the brain. She will also address how therapist/leader attachment influences the therapy process. Clinical examples will be used to bring the theory and research to life. Audience participation is encouraged and time will be allotted to ask questions and discuss the presentation.

## Plenary Oral Presentations

### [Plenary Oral Presentations 1](#)

12 August 2020 – 11:45 to 13:00 BST

TALK A

12 August 2020 – 11:45 to 12:00 BST

#### **White matter integrity moderates the relation between experienced childhood maltreatment and fathers' behavioral response to infant crying**

Kim Alyousefi-van Dijk<sup>1,2</sup>, Noa van der Knaap<sup>1,2</sup>, Renate S. M. Buisman<sup>1</sup>, Lisa Horstman<sup>1,2</sup>, Anna M. Lotz<sup>1,2</sup>, Madelon M. E. Riem<sup>1,3</sup>, Carlo Schuengel<sup>1</sup>, Marinus H. van IJzendoorn<sup>4</sup>, Marian J. Bakermans-Kranenburg<sup>1,2</sup>

<sup>1</sup>Clinical Child & Family Studies, Faculty of Behavioral and Movement Sciences, Vrije Universiteit, Amsterdam, the Netherlands

<sup>2</sup>Leiden Institute for Brain and Cognition, Leiden University Medical Center, Leiden, the Netherlands

<sup>3</sup>Center of Research on Psychological & Somatic Disorders, Department of Medical and Clinical Psychology, Tilburg University, Tilburg, Netherlands

<sup>4</sup>Department of Psychology, Education, and Child Studies, Erasmus University Rotterdam, Rotterdam, the Netherlands

The ability to provide appropriate responses to infant distress is vital to paternal care, but may be affected by fathers' experiences of childhood maltreatment. Detrimental effects of childhood maltreatment have been found in the adult brain's white matter fibers, accompanied with impaired emotional and cognitive functioning. In the current study (N = 121), we examined new and expectant fathers' childhood maltreatment experiences (i.e., emotional and physical abuse and neglect), current behavioral responses (i.e. handgrip force) to infant cry sounds, and white matter integrity using diffusion tensor imaging. Firstly, exposure to childhood maltreatment was negatively associated with fathers' modulation of handgrip force in response to infant crying. Secondly, the association between experienced childhood maltreatment and white matter integrity was not significant in whole-brain analyses. Lastly, we found that tract integrity in one out of several regions of interest (i.e. bilateral uncinate fasciculus) moderated the associations between maltreatment and handgrip force. The association between modulation of handgrip force during infant crying and maltreatment exposure was attenuated for fathers with higher tract integrity in the bilateral uncinate fasciculus. These findings possibly point towards insufficient behavioral inhibition and / or emotional dysregulation in fathers who experienced childhood maltreatment, as well as possible resiliency for this effect in those with larger integrity in brain fibers connecting the amygdala and prefrontal cortex.

TALK B

12 August 2020 – 12:00 to 12:15 BST

**Neurobiological and behavioral dyadic synchrony in children and mothers with a history of institutionalization. A research protocol.**

Oksana Talantseva<sup>1</sup>, Iuliia An<sup>1</sup>, Marina Zhukova<sup>1,2</sup>

<sup>1</sup>*Saint Petersburg State University, Saint Petersburg, Russia*

<sup>2</sup>*University of Houston, Houston, TX, USA*

This multidisciplinary study aims to identify neurobiological and behavioral markers of synchrony in dyads of children and mothers raised in orphanages. While institutional care-leavers are found to be vulnerable to mental health issues (Fernandez & Lee, 2017) and exhibit suboptimal parental strategies (Egorova & Mironova, 2012), there is a lack of research on biological markers of attachment in this at-risk population. The sample will consist of 100 dyads: 50 mothers (18 to 35 yrs) with a history of institutionalization and their children (8 mos to 5 yrs), and 50 matched control dyads. The study will include EEG-hyperscanning and video-recording during the following experimental tasks: Independent and Joint Free Play; Reciprocal Games; Cooperative and Competitive Problem Solving Task; Motor Synchrony Task; Joint Storytelling. A dual-EEG will be recorded using 24-ch Smarting (mBrainTrain, LLC) system. The EEG data will be analyzed using the phase coherence method. Video-recordings will be coded using macro- (CIB) and micro-coding schemes by two experienced raters independently. During the Motor Synchrony Task we are planning to additionally record the dyads movements while drawing. Salivary oxytocin will be collected and measured using ELISA Kit 3 times: before and 15 after the interaction started, and 30 minutes after the interaction. Overall, we expect lower synchrony in dyads of children and mothers with a history of institutionalization compared to the dyads of children and mothers raised in biological families on behavioral and neurobiological levels.

This research was supported by grant No 19-78-10102 from the Russian Science Foundation (P.I.: Marina A. Zhukova).

TALK C

12 August 2020 – 12:15 to 12:30 BST

## **The role of neural synchrony in mother-infant interactions for attachment**

Trinh Nguyen<sup>1</sup>, Nicole Zaviska<sup>1</sup>, & Stefanie Höhl<sup>1</sup>

<sup>1</sup>University of Vienna, Austria

Caregiver-infant interactions are at the core of the development of the infant's attachment system, but the underlying neurophysiological mechanisms are still unclear. A central feature of these interactions is the sharing of affective states, which has been proposed to emerge through bio-behavioral synchronization between mother and infant (Atzil & Gendron, 2017). Despite the empirical evidence in the behavioral domain (e.g. Lundy, 2003), less is known about the link between attachment and neural synchrony. Accordingly, we want to investigate whether neural synchrony in mother-infant interactions at 4-6 months of age is related to infant's attachment at 12 months of age. Here, we first tested 4- to 6-month-old infants and their primary caregiver (N=69 dyads) in three conditions and then again at 12 months of age. At 4-6 months, we assessed neural synchrony during distal and proximal interactions through dual functional near infrared spectroscopy (fNIRS) measurements in 22 channels, which were located over bilateral inferior frontal and medial prefrontal regions. Wavelet transform coherence was used to calculate neural synchrony in the same channels of both participants. At 12 months, two trained and certified raters observed each family in their home for two hours and assessed families on the Attachment Q-Sort scales. Preliminary findings reveal that mother-infant dyads (n=50) show higher neural synchrony during the proximal watching condition in association with higher attachment security,  $X^2(2)=8.06$ ,  $p=.018$ . This finding indicates the potential role of neural synchrony in attachment development.

TALK D

12 August 2020 – 12:30 to 12:45 BST

## **Differences in how maternal psychological control relates to child's attachment avoidance, anxiety, and security across different cultural contexts**

Lubiewska, K.<sup>1</sup>, Głogowska, K.<sup>2</sup>, Sumer, N.<sup>3</sup>, Aran, O.<sup>4</sup>

<sup>1</sup>University of Warsaw, Warsaw, Poland

<sup>2</sup>Kazimierz Wielki University, Bydgoszcz, Poland

<sup>3</sup>Sabancı University, Istanbul, Turkey

<sup>4</sup>University of Denver, USA

Results of previous studies indicate that maternal psychological control relates to child's developmental outcomes differently across cultures. The present study aims to analyze cross-cultural differences in levels and relations between maternal intrusiveness, her love withdrawal (indicative for psychological control), and the child's attachment quality. The study is a part of the cross-cultural project "Combination of emic and etic approach to parenting and attachment" carried out in Netherlands, Poland and Turkey. Data from 757 mothers and their children between the ages of 8 and 12 were collected in each country. Maternal and child's reports of maternal intrusiveness were analyzed in the study. Child's attachment was assessed using scales measuring attachment avoidance, anxiety (attachment insecurity indicators), as well as treating mother as safe haven and secure base (attachment security indicators). Results of the study revealed cross-cultural differences in levels of: treating a mother as safe haven and secure base, attachment anxiety of children, and maternal psychological control indicators. Furthermore, results revealed that intrusiveness and love withdrawal explained attachment insecurity indicators, whereas only child's report of maternal intrusiveness explained child's security indicators. Moderation analyses revealed that child's reports of maternal intrusiveness and love withdrawal were differently related with child's attachment avoidance across cultures. Whereas maternal intrusiveness was related with attachment avoidance only in Poland (not in Turkey and Netherlands), maternal love withdrawal was related with child's avoidance only in Turkey and Netherlands (not in Poland). Results are discussed in the light of cross-cultural research on parenting, attachment theory and the cultural fit hypothesis.

TALK E

12 August 2020 – 12:45 to 13:00 BST

## **Depending On The Methodological Tradition, Adult Insecure Avoidant/Dismissing Attachment May Or May Not Be Linked To Internalizing Symptoms: A Conundrum**

Or Dagan<sup>1</sup>

<sup>1</sup>*State University of New York at Stony Brook, USA*

In the past 70 years, attachment theory has become one of the most prolific research domains in social-developmental psychology. Despite common conceptual roots, two schools of research have developed in parallel to each other, operationalizing adult attachment measures that have been meta-analytically shown to only trivially link to one another.<sup>1</sup> Whereas the developmental tradition has heavily relied on a semi-structure interview (the Adult Attachment Interview; AAI) to assess attachment ‘patterns’, the social-personality tradition has used self-reports to assess attachment ‘styles’. Comparing findings from the two attachment traditions, however, reveals a conundrum: Depending on the methodological tradition, adult insecure avoidant/dismissing attachment may or may not be linked to internalizing symptoms.

Whereas a large research corpus indicating that self-reported insecure-avoidant/dismissing adults report significantly more internalizing symptoms than securely attached individuals, two recent meta-analyses<sup>2,3</sup> established that AAI classified insecure-dismissing and securely attached adults did not differ in levels of internalizing symptoms. Moreover, the only study that compared links between each adult attachment methodology and internalizing symptoms reported that more internalizing symptoms were associated with both (a) lower scores on the AAI insecure-dismissing dimension, and (b) higher scores of the self-reported insecure-avoidant/dismissing dimension

In this short presentation I will highlight the assumptions underlying each methodological tradition, and how they may have contributed to the contradictory findings. I will argue that assessing adult attachment via both methodological traditions against objective neuroscientific stress markers may aid in understanding how they differs from each other, but also how they may complement each other to explain attachment-related phenomena.



## [Plenary Oral Presentations 2](#)

13 August 2020 – 11:45 to 13:00 BST

TALK F

13 August 2020 – 11:45 to 12:00 BST

### **Testosterone and fathers' parenting unraveled: Links with the quality of father-child interactions**

Else E. de Vries<sup>1</sup>, Lotte D. van der Pol<sup>2</sup>, Harriet J. Vermeer<sup>1</sup>, Marleen G. Groeneveld<sup>2</sup>, Tom Fiers<sup>3</sup>, and Judi Mesman<sup>1</sup>

<sup>1</sup>*Education and Child Studies, Leiden University, the Netherlands*

<sup>2</sup>*Faculty of Governance and Global Affairs, Leiden University, The Netherlands*

<sup>3</sup>*Clinical Chemistry, Ghent University Hospital, Belgium*

Father involvement in childcare is widely recognized as being beneficial to children's social and emotional development. Individual differences in quality of father involvement in caregiving might in part be explained by fathers' testosterone (T) levels. We examined the links between fathers' (n = 32) salivary T levels and fathers' sensitivity during different types of interaction between father and their young child (12 to 30 months of age). During two home visits, video observations of father-child interactions were conducted to measure fathers' sensitivity during a challenging (discipline) and harmonious (free play) interaction. Fathers' saliva was collected right before and after each father-child interaction. The results showed that changes in fathers' T levels during the father-child interactions predicted fathers' sensitivity. Specifically, the more T increased during the challenging interaction, or decreased during the harmonious interaction, the more sensitive the father was during that interaction as well as during a subsequent interaction. These findings suggest that parenting quality is most optimal when fathers' T system reacts in the expected direction given the context of the father-child interaction, i.e., a T decrease during a harmonious interaction and a T increase during a challenging interaction. Our study underscores the importance of taking biological factors into account when examining the role of fathers in early child development.

TALK G

13 August 2020 – 12:00 to 12:15 BST

### **Emotional availability and physiological reactivity: a pilot study in first time mothers**

Cenci G.<sup>1</sup>, Mazzeschi C.<sup>1</sup>, Babore A.<sup>2</sup>, Ghiglieri V.<sup>1,3</sup>, Pazzagli C.<sup>1</sup>

<sup>1</sup>University of Perugia, Italy

<sup>2</sup>University of Chieti, Italy

<sup>3</sup>Fondazione Santa Lucia, Italy

Oxytocin (OT) is considered a crucial neuropeptide hormone for mother-infant relations and the sensitive maternal response (Galbally et al., 2010). Despite recent studies showed a correlations between OT and attachment and maternal behaviour, yet little is known about the role of OT and emotional availability (EA). EA is a construct assessing the dyadic and emotional qualities of adult-child relationships, which is considered an important predictor of a variety of child outcomes (Saunders et al., 2015). The present study aimed to explore the association between maternal OT and EA in a sample of Italian mothers (N=34; MAge= 33,6 years, SD= 4.16) at 3 months postpartum. New mothers participated at Still-Face Procedure (SFP; Tronick et al., 1978) and OT levels were assessed through three saliva samples: before, 1, and 20 minutes after SFP. The mother-child interaction was coded using the Emotional Availability Scale (EAS; Biringen et al., 1998). In order to verify the possible relationships between mother's OT and EA correlational analyses were performed. Result showed that maternal oxytocin activation was positively associated with EA structuring ( $r=.375$ ,  $p<.05$ ), non-intrusiveness ( $r=.502$ ,  $p<.001$ ) and non-hostility ( $r=.429$ ,  $p<.05$ ) 20 minutes after the SFP. The child responsiveness and child's involvement were also associated with maternal OT response both at 1 minute (Resp:  $r=.429$ ,  $p<.05$ ; Inv:  $r=.443$ ,  $p<.001$ ) and at 20 minutes after the task (Resp:  $r=.445$ ,  $p<.001$ ; Inv:  $r=.353$ ,  $p<.05$ ). These results showed the important interplay between OT and the dyadic and emotional qualities of adult-child relationships.

TALK H

13 August 2020 – 12:15 to 12:30 BST

## **Different Epigenetic Patterns in the Oxytocin System Might Unveil Subtypes of Avoidance**

Gal Kaplan<sup>1</sup>, Tsachi Ein-Dor<sup>1</sup>

<sup>1</sup>*Baruch Ivcher School of Psychology, Interdisciplinary Center (IDC) Herzliya, Israel*

Decades of research on attachment theory yielded considerable insights about close relationships and their effect on the development and maintenance of attachment ties. This extensive literature, however, also comprises inconclusive findings and contradictions regarding attachment avoidance and its distinction from security and/or other insecure styles. In the current study, we explored one possible explanation to the consistent inconsistency in avoidance research – the presence of avoidance subtypes. Specifically, by employing latent profile analysis we revealed 4 subtypes of avoidance – three with high general avoidance, and one with low general avoidance and thus high security. The 3 high general avoidance groups differed in the source of avoidance: parent-related, peer-related, and chronic avoidance. We then examined whether these avoidance subtypes have different epigenetic profiles (i.e. methylation patterns) on three key genes in the oxytocin system – the oxytocin (OXT) and oxytocin receptor (OXTR) genes, and a gene related to the secretion of oxytocin (CD38). We found that the chronic avoidance group but not the other groups had higher methylation on various regulatory constructs on the OXT and CD38 genes that might implicate in lower production and secretion of oxytocin among people with chronic avoidance. In contrast, we found higher methylation on regulatory constructs of the OXTR gene for the parent-related avoidance group that might implicate in fewer receptors for oxytocin among this group. Our findings suggest that understanding which particular relationship stands at the basis of high avoidance, is crucial for the social and biological understanding of avoidance.

TALK I

13 August 2020 – 12:30 to 12:45 BST

## **System-Wide Analysis of Insecure Attachment Patterns in the Oxytocin System**

Amir Izaki<sup>1</sup>, Tsachi Ein-Dor<sup>1</sup>

<sup>1</sup>*Baruch Ivcher School of Psychology, Interdisciplinary Center (IDC) Herzliya, Israel*

The oxytocin system is considered one of the primary biological systems related to social tendencies. It has, therefore, been viewed as an important factor in the understanding of the biological aspects of attachment patterns. Research examining the oxytocin system's genetic and epigenetic basis, in relation to attachment patterns, has mainly focused on three genes: OXT (the oxytocin gene), OXTR (the oxytocin receptor gene), and CD38 (a gene related to secretion of oxytocin). The oxytocin system, however, is composed of dozens of genes related to a myriad of processes, such as memory and learning, cardiovascular arousal, and sensory excitability. In this research, we present a system-wide association analysis that examines the methylation profiles in the oxytocin system of attachment avoidance and anxiety. Results suggest that genes which regulate learning and memory formation is linked with insecure attachment, thus constituting a potentially initial biological evidence of Bowlby's construct of "internal working models". Additional findings highlight associations between genes that regulate the oxytocin pathway and insecure attachment patterns with specific findings regarding the system's positive feedback control loop. Implications on the potential of system-wide association studies to the research of attachment patterns are discussed.

TALK J

13 August 2020 – 12:45 to 13:00 BST

## **Associations Among Maternal Sensitivity, Infant Plasticity Alleles, and Infant Attachment: Project Proposal**

Potter-Dickey, A.<sup>1</sup>, Letourneau, N.<sup>1,2,3</sup>, Giesbrecht, G.<sup>2</sup>, Dewell, S.<sup>1</sup> & de Koning, A.P.J.<sup>4</sup>

<sup>1</sup>Faculty of Nursing, University of Calgary, Canada

<sup>2</sup>Department of Pediatrics, Cumming School of Medicine, University of Calgary, Canada

<sup>3</sup>Departments of Psychiatry and Community Health Sciences, Cumming School of Medicine, University of Calgary, Canada

<sup>4</sup>Department of Biochemistry & Molecular Biology and Medical Genetics, University of Calgary, Canada

**Background:** Secure maternal-infant attachment, the ability of a 9-20 month-old infant to use their caregiver as a secure base for exploration and a safe haven from stress, is linked to more optimal life-long mental and physiological health (1-3). Despite being regarded as an important predictor of attachment, maternal sensitivity accounts for only a third of the association between maternal attachment representation and infant attachment security (5, 6). Genetic factors may affect attachment patterns (7), and certain alleles may connote plasticity (8), suggesting greater/lesser impacts from caregiving (i.e., maternal sensitivity) in a differentially ref manner (5,9).

**Objective:** To understand how a child's genetic plasticity, may moderate associations between maternal sensitivity and infant attachment patterns (8, 10) **Methods:** I will conduct correlational research employing data from maternal-infant pairs (n=176) who provided infant blood or buccal cell samples for extraction of plasticity alleles and analysis (e.g. DRD4 [7- repeat], 5-HTTLPR, DAT1) and completed assessments of maternal-infant relationship quality using the Parent-Child Interaction Teaching Scale (11) at 6 months and attachment pattern using Ainsworth's Strange Situation Procedure at 18 months (12). Conditional process modelling (13) will be employed to examine these associations, taking into account known covariates (e.g., maternal depression, socioeconomic status). Power analysis suggests a sufficient sample size, assuming alpha of .05, and power of 0.8 and minimum ten cases per variable.

**Implications:** Exploring these associations offers a nuanced understanding of the importance of both genetic plasticity and maternal caregiving quality in predicting children's attachment.

## Virtual Poster Room Presentations

### [Virtual Poster Room Presentations 1](#)

12 August 2020 – 16:30 to 17:30 BST

POSTER 01

#### **Assessing Individual Differences in Attachment Insecurity using the Attachment Script Assessment: Validation of Novel Scales in a Young Adult Sample**

Paul D. Caldo<sup>1</sup>, Ashley M. Groh<sup>2</sup>, Katherine C. Haydon<sup>3</sup>

<sup>1</sup>Institute of Child Development, University of Minnesota – Twin Cities; <sup>2</sup>Department of Psychological Sciences, University of Missouri – Columbia; <sup>3</sup>Psychology and Education Department, Mount Holyoke

POSTER 02

#### **Improving Parent-Child Interaction Quality and Children’s Development with the Online First Pathways Intervention**

Jelena Komanchuk<sup>1</sup>, Nicole Letourneau<sup>1</sup>, Linda Duffett-Leger<sup>1</sup>, Judy L. Cameron<sup>2</sup>

<sup>1</sup>University of Calgary; <sup>2</sup>University of Pittsburgh

POSTER 03

#### **The Implications of Construal Level and Attachment Style in Romantic Relationships**

Rose Bern<sup>1</sup>, Marika Yip-Bannicq<sup>2</sup> & Patrick Shrout<sup>1</sup>

<sup>1</sup>Department of Psychology, New York University; <sup>2</sup>Department of Psychology, Columbia University, New York

POSTER 04

#### **Child-Father Preschool Attachment and Externalizing Problems in Middle Childhood: Integrative Hypothesis and Gender Comparisons**

Audrey-Ann Deneault<sup>1</sup>, Jean-François Bureau<sup>1</sup>, & Kim Yurkowski<sup>1</sup>

<sup>1</sup>University of Ottawa

POSTER 05

#### **Development and Validation of the Social Thermoregulation, Risk Avoidance, and Eating Questionnaire - 2**

Olivier Dujols<sup>1</sup>, Siegwart Lindenberg<sup>2,3</sup>, Richard A. Klein<sup>3</sup>, STRAEQ-2 team<sup>4</sup>, Hans IJzerman<sup>5</sup>

<sup>1</sup>Université Grenoble Alpes, France; <sup>2</sup>Rijksuniversiteit Groningen, The Netherlands; <sup>3</sup>Tilburg University, The Netherlands; <sup>4</sup>The STRAEQ-2 team is a collective of 152 authors at 115 universities; <sup>5</sup>Université Grenoble Alpes, France

POSTER 06

#### **Coparenting with Toddlers: The Role of Infant Attachment Security**

Luis Velasquez<sup>1</sup>, Shuqi Zhang<sup>1</sup>, Nancy Hazen<sup>1</sup> and Deborah Jacobvitz<sup>1</sup>

<sup>1</sup>University of Texas at Austin

POSTER 07

**Exploring the dog-human relationship using a multi-method approach**

Sabrina Karl<sup>1</sup>, Magdalena Boch<sup>2,3</sup>, Isabella C. Wagner<sup>2</sup>, Christoph J. Völter<sup>1</sup>, Claus Lamm<sup>2</sup>, and Ludwig Huber<sup>1</sup>

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POSTER 08

**Process evaluation of the Attachment Video-feedback Intervention in two Colombian cases**

Mayra Liliana Paredes Aguilar<sup>1,2</sup>, Jenny Amanda Ortiz Muñoz<sup>3</sup>, Natalia Varela Pulido<sup>4</sup>, Christian Rincón Mendieta<sup>4</sup>, Pablo Muñoz Specht<sup>4</sup>, Olga Alicia Carbonell Blanco<sup>5</sup>, Diego Mauricio Aponte Canencio<sup>4</sup>, Juan Carlos Caicedo Mera<sup>4</sup>, Carmen Elvira Navia Arroyo<sup>1</sup>, Nubia Patricia Bolívar Sanchez<sup>1</sup>

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POSTER 09

**Changes in adult attachment styles in American college students over time: A meta- analysis**

Sara Konrath<sup>1</sup>, William Chopik<sup>2</sup>, Courtney Hsing<sup>3</sup>, Ed O'Brien<sup>4</sup>

<sup>1</sup>Indiana University; <sup>2</sup>Michigan State University; <sup>3</sup>Ohio State University; <sup>4</sup>University of Chicago

POSTER 10

**Relationship between ACES, mental health, attachment and family resilience**

Voulfa Alicia James<sup>1</sup>

<sup>1</sup>CNHP – Counseling & Family Therapy Dept., Drexel University, Philadelphia

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13 August 2020 – 16:30 to 17:30 BST

POSTER 11

**The impact of child presence and parent-child attachment security on caregiver wellbeing during COVID-19 lockdown**

Zara P. Brodie<sup>1</sup>, Roxanne Hawkins<sup>1</sup>

<sup>1</sup>University of the West of Scotland

POSTER 12

**The role of early attachment and current family functioning on adolescents' psychological wellbeing during COVID-19 pandemic**

Stefania V. Vacaru<sup>1</sup>, Roseriet Beijers<sup>2</sup>, Carolina de Weerth<sup>1</sup>

<sup>1</sup>Radboud University Medical Center, Nijmegen, The Netherlands; <sup>2</sup>Radboud University, Nijmegen, The Netherlands

POSTER 13

**Links between Mothers' Attachment Trauma, Emotion Regulation, & Parenting Stress**

Cherry Chan<sup>1</sup>, Samantha Reisz<sup>2</sup>, Carol George<sup>3</sup>

<sup>1</sup>Kidango, Inc.; <sup>2</sup>Washington State University; <sup>3</sup>Mills College

POSTER 14

**OPRM1 gene G allele carriers demonstrate enhanced associative conditioning in adverse settings**

Yana Uzelac<sup>1</sup>, Sarah M. Merrill<sup>1,2</sup>, Sarah R. Moore<sup>1,2</sup>

<sup>1</sup>British Columbia Children's Hospital Research Institute; <sup>2</sup>University of British Columbia, Department of Medical Genetics

POSTER 15

**Measurement invariance of the Croatian adaptation of the ECRQ across three relationship types**

Vera Cubela Adoric<sup>1</sup> & Karla Matic<sup>1</sup>

<sup>1</sup>Department of Psychology, University of Zadar, Croatia

POSTER 16

**Foster Parents' Adverse Childhood Experience, Adult Attachment, & Parenting Stress**

Samantha Reisz<sup>1</sup>, Ashleigh I. Aviles<sup>2</sup>, Tina Adkins<sup>2</sup>

<sup>1</sup>Washington State University; <sup>2</sup>University of Texas at Austin

POSTER 17

**Maternal Experiences of Childhood Emotional Abuse: Relations with Toddler Emotional Dysregulation**

Ashleigh I. Aviles<sup>1</sup>, Samantha Reisz<sup>2</sup>, Deborah Jacobvitz<sup>1</sup>, and Nancy Hazen<sup>1</sup>

<sup>1</sup>The University of Texas at Austin; <sup>2</sup>Washington State University

POSTER 18

**Unresolved Adult Attachment and Parenting Behaviors**

Lisa S. Panisch<sup>1</sup>, Nancy Hazen<sup>2</sup>, Deborah Jacobvitz<sup>2</sup>

<sup>1</sup>Center for the Study and Prevention of Suicide, University of Rochester Medical Center; <sup>2</sup>Department of Human Development and Family Sciences, University of Texas at Austin

POSTER 19

**The Relationship between Attachment Processes and the Consequences of Terminated Friendships**

Kristen M. Eyssell<sup>1</sup>

<sup>1</sup>University of Baltimore