POLYVAGAL THEORY, OXYTOCIN, AND THE NEUROBIOLOGY OF SOCIAL BEHAVIOR

USING THE SOCIAL ENGAGEMENT SYSTEM TO PROMOTE RECOVERY FROM EXPERIENCES OF THREAT, STRESS AND TRAUMA.

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Stephen Porges’ work on the Polyvagal Theory and C. Sue Carter’s work on oxytocin and social behavior are major scientifically validated advancements in neuroscience with clinical applications to a new brain-body medicine and psychotherapy. This three day workshop will give you a comprehensive understanding of this groundbreaking research and how this new knowledge informs clinical practice.

Safety is critical in enabling humans to optimize their potential. The neurophysiological processes associated with feeling safe are a prerequisite not only for social behavior but also for accessing both the higher brain structures that enable humans to be creative and generative and the lower brain structures involved in regulating health, growth, and restoration. The Polyvagal Theory explains how social behavior turns off defenses and promotes opportunities to feel safe. It provides an innovative model to understand bodily responses to trauma and stress and the importance of the client’s physiological state in mediating the effectiveness of clinical treatments. From a Polyvagal perspective, interventions that target the capacity to feel safe and use social behavior to regulate physiological state can be effective in treating psychological disorders that are dependent on defense systems.
Polyvagal Theory provides a new perspective and expands our understanding of normal and atypical behavior, mental health, and psychiatric disorders. By incorporating a developmental perspective, the theory explains how regulation of autonomic function forms the neural “platform” upon which social behavior and the development of trusting relationships are based. The theory explains how reactions to danger and life threat and experiences of abuse and trauma may retune our nervous system to respond to friends, caregivers, and teachers as if they were enemies. The Polyvagal Theory provides a neurophysiological understanding of the variations in human experiences associated with emotion, attachment, social communication, and self-regulation. You will learn how social behavior turns off defenses and promotes opportunities to feel safe so that you can better treat disorders that are dependent on defense systems.

Dr. Carter has examined the hypothesis that oxytocin pathways—which include the neuropeptide oxytocin, the related peptide vasopressin, and their receptors—are at the center of physiological and genetic systems that permitted the evolution of the human nervous system and allowed the expression of contemporary human sociability. Unique actions of oxytocin, including the facilitation of birth, lactation, maternal behavior, genetic regulation of the growth of the neocortex, and the maintenance of the blood supply to the cortex,
may have been necessary for encephalization. Peptide-facilitated attachment also allows the extended periods of nurture necessary for the emergence of human intellectual development. In general, oxytocin acts to allow the high levels of social sensitivity and attunement necessary for human sociality and for rearing a human child. Under optimal conditions oxytocin may create an emotional sense of safety. Oxytocin dynamically moderates the autonomic nervous system, and effects of oxytocin on **vagal pathways**, as well as the antioxidant and anti-inflammatory effects of this peptide, help to explain the pervasive adaptive consequences of social behavior for emotional and physical health.

The workshop will integrate research on the Polyvagal Theory and oxytocin and apply this information to clinical questions. The Polyvagal Theory provides a plausible explanation of several features that are compromised during stress and observed in several psychiatric disorders. The Polyvagal Theory introduces a new perspective relating autonomic function to behavior that includes an appreciation of the autonomic nervous system as a “system,” the identification of neural circuits involved in the regulation of autonomic state, and an interpretation of autonomic reactivity as adaptive within the context of the phylogeny of the vertebrate autonomic nervous system. This workshop will integrate the research on the Polyvagal Theory with current research on neuroendocrine processes including the mammalian neuropeptides of oxytocin and vasopressin. These peptides can facilitate social behaviors and also have the capacity to modulate stress and coping.

Dr. Carter, will present information on the neurobiology of social bonding and love. She will explore how oxytocin is involved in regulating stress. Dr. Carter’s research focuses on neuroendocrine systems and how these systems explain the positive impact on physical and mental health of social support, social bonds and trusting relationships. The presentation will focus on how oxytocin and vasopressin act as “neuromodulators” within the theoretical context of the Polyvagal Theory.

The workshop will explore both clinical applications of the Polyvagal Theory and the dependence of autonomic regulation on oxytocin. The workshop has three objectives: 1) to provide an explicit statement of the Polyvagal Theory, 2) to illustrate how a Polyvagal perspective provides insights into the clinical assessment and
treatment of numerous conditions of mental and physical health, and 3) to explain the dependence of autonomic regulation on oxytocin in developing social bonds and in regulating stress responses within social contexts.

Day 1-2 will focus on the Polyvagal Theory. You will learn how, via evolution, a connection emerged in the brain between the nerves that control the heart and the face. This connection provides the structures for the Social Engagement System which links our bodily feelings and thought processes with facial expression, vocal intonation, and gesture.

On Day 3, Dr. Porges will be joined by Dr. Sue Carter, who discovered how neuropeptides, such as oxytocin and vasopressin, program the developing nervous system, with lifelong consequences for the brain and for social behavior. Integrating neuropeptide research with the Polyvagal Theory, Drs. Porges and Carter will explore clinical applications. These include methods of bio-behavioral assessment and potential strategies for treatment of features associated with autism, auditory hypersensitivities, and trauma.

**In this workshop, through presentations, experiential exercises, and class discussion, participants will learn:**

- The principles and features of the Polyvagal Theory and how to apply it in a clinical setting.
- How the Polyvagal Theory can demystify several features related to stress-related illnesses and psychiatric disorders such as PTSD, autism, depression, and anxiety.
- What the Social Engagement System is and how the brain-face-heart connection evolved.
• How deficits in the regulation of the Social Engagement System relate to the core features of several psychiatric disorders.
• Insight into how neural process evaluates risk in the environment and triggers adaptive neural circuits which promote either social interactions or defensive behaviors.
• How the Social Engagement System is compromised by stress and trauma and how to reset it.
• Research relating oxytocin to social behavior within the context of the Polyvagal Theory.
• Clinical implications of oxytocin on mental health and behavioral problems.
• Explain the dependence of autonomic regulation on oxytocin in developing social bonds and in regulating stress responses within social contexts.

TOPICS WILL INCLUDE:

THE POLYVAGAL THEORY
• Evolutionary changes and adaptive functions in the autonomic nervous system
• Humans retain a phylogenetically-ordered response hierarchy to challenges
• The discovery of the three neural platforms that provide the neurophysiological bases for social engagement, flight/flight, and shut-down behaviours.

SOCIAL ENGAGEMENT SYSTEM AND PSYCHIATRIC AND BEHAVIORAL DISORDERS
• A description of the “face-heart” connection that forms a functional social engagement system
• How our facial expressions, vocalizations, and gestures are regulated by neural mechanisms that are involved in regulating our autonomic nervous system

NEUROCEPTION: DETECTING AND EVALUATING RISK
• How our social and physical environment trigger changes in physiological state
• Understanding that adaptive physiological reactions may result in maladaptive behaviors
• Immobilization without fear
• Play as a neural exercise
• Listening as a neural exercise
DEMYSTIFYING BIOBEHAVIORAL RESPONSES TO TRAUMA AND ABUSE
- Flight/fight and immobilization defense strategies
- Adaptive function of immobilization and the associated clinical difficulties
- How the stresses and challenges of life distort social awareness and displace spontaneous social engagement behaviors with defensive reactions.

APPLYING THE POLYVAGAL THEORY IN CLINICAL SETTINGS
- Understanding auditory hypersensitivities
- State regulation as a core feature of psychiatric disorders
- Deconstructing features of autism and PTSD
- Strategies to explain disruption and repair of symbiotic regulation
- Identifying social cues that disrupt or repair defensive reactions

OXYTOCIN PATHWAYS
- Common neural pathways that support reproduction, parenting, and social behavior
- Distinct, complimentary, and overlapping adaptive roles of vasopressin and oxytocin

PHYSIOLOGICAL AND ANATOMICAL CHARACTERISTICS OF THE OXYTOCIN SYSTEM
- Neurochemistry of oxytocin and vasopressin
- Oxytocin and vasopressin as neuroendocrine modulators of visceral state
- Receptors for Oxytocin and Vasopressin
- Dependence of autonomic regulation on oxytocin

OXYTOCIN RESPONSES DURING SAFETY, DANGER, AND LIFE THREAT
- Oxytocin and love
- Oxytocin and coping with the stress of life
- Consequences of isolation may be mediated or buffered via oxytocin

OXYTOCIN AS MEDICINE
- Oxytocin treatments are not always prosocial
- Nasal oxytocin as a treatment for autism

ANATOMICAL, PHYSIOLOGICAL, GENETIC, AND EPIGENETIC EFFECTS OF OXYTOCIN
- Genetic and epigenetic variation
- Oxytocin and the development of the neocortex
- Oxytocin, encephalization, and social behavior
STEPHEN W. PORGES, PH.D.
Professor of Psychiatry
University of North Carolina

Is Professor of Psychiatry at the University of North Carolina. He is the former President of the Federation of Behavioral, Psychological and Cognitive Sciences and the Society for Psychophysiological Research. He is the originator of the Polyvagal Theory. He has published more than 200 peer-reviewed scientific papers across several disciplines including anesthesiology, critical care medicine, ergonomics, exercise physiology, gerontology, neurology, obstetrics, pediatrics, psychiatry, psychology, space medicine, and substance abuse. In 1994 he proposed the Polyvagal Theory, a theory that links the evolution of the mammalian autonomic nervous system to social behavior and emphasizes the importance of physiological state in the expression of psychiatric disorders. He is the author of *The Polyvagal Theory* and is currently writing *Clinical Applications of the Polyvagal Theory: The Transformative Power of Feeling Safe*. For more information, please visit www.stephenporges.com.
C. SUE CARTER, PH.D.
Director, Kinsey Institute
Indiana University

Is Director of the Kinsey Institute and Rudy Professor Biology at Indiana University. Dr. Carter studies the neurobiology of socio-emotional behaviors, including social bonds and parental behavior. Dr. Carter discovered the important role that oxytocin plays in establishment of social bonds and how neuropeptides can program the developing nervous system with life-long consequences for brain and social behavior. She is involved in research examining the role of oxytocin and vasopressin in mental illness. Her most recent work focuses on the developmental consequences of oxytocin, including perinatal exposure to synthetic oxytocin, and the protective role of this peptide in the regulation of behavioral and autonomic reactivity to stressful experiences. She has authored over 250 articles and edited 5 volumes, including *Attachment and Bonding: A New Synthesis*. Dr. Carter has served as President of the International Behavioral Neuroscience Society. For more information, please visit www.kinseyinstitute.org.
LANGUAGE
English

TIMETABLE
Friday 10-18
Saturday 10-18
Sunday 9-17

LOCATION
Rome

FEE
€ 300,00 VAT included

REGISTRATION
Ask the application form to:
isc@istitutodiscienzecognitive.it
To register yourself, you should send the
application form with a copy of the transfer
receipt to isc@istitutodiscienzecognitive.it
Transfer to:
Banca Nazionale del Lavoro Piazza d’Italia
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