DDP FALL CONFERENCE, 2016
The Neurobiology of Trustbuilding: On Being a Social Buffering Amygdala Whisperer

Jonathan Baylin, PhD
Coauthor with Dan Hughes,
The Neurobiology of Attachment-focused Therapy (Norton 2016)
SCIENCE-PRACTICE DIALOGUE: THE PATHWAY TO BETTER TREATMENT

DDP: ATTACHMENT-FOCUSED TREATMENT AND CAREGIVING

SOCIAL BUFFERING

The Neurobiology of Attachment-Focused Therapy

Enhancing Connection and Trust in the Treatment of Children and Adolescents

Jonathan Baylin | Daniel A. Hughes

NEUROBIOLOGY OF THE PARENTAL BRAIN

EDITED BY ROBERT S. BRIDGES
EXPERIENCE-DEPENDENT BRAIN DEVELOPMENT

NUPTURING CARE

TRUSTING BRAIN: COMFORT AND JOY
- SOCIAL BUFFERING
- CO-REGULATION OF AFFECT
- JOYFUL CONNECTION (COMPANIONSHIP)
- SAFETY TO BE CURIOUS
- GROWTH-PROMOTING

MISTRUSTING BRAIN: SURVIVAL WITHOUT COMFORT AND JOY
- SELF SOOTHING
- SELF PROVISIONING
- CONSTANT WARINESS
- GROWTH-SUPPRESSING

FRIGHTENING CARE
BLOCKED TRUST: WHEN YOUNG CHILDREN BLOCK THE PAIN OF REJECTION AND THE CAPACITY TO DELIGHT IN ORDER TO SURVIVE IN A WORLD WITHOUT COMFORT AND JOY

BLOCKED CARE: WHEN THE CHILD’S BLOCKED TRUST TRIGGERS THE SUPPRESSION OF CARING IN THE CARER

BLOCKED CHANGE: MUTUAL MISTRUST AND DEFENSIVENESS IN PARENT/CHILD RELATIONSHIP
Experience Dependent Sculpting of the Amygdala and Its Connections

EPIGENETICS: INTERPLAY OF EXPERIENCE AND GENE EXPRESSION

Affective/Reflective Dialogue And “Minded” Behavior

Reflexive Self Defense And Self Comforting
"YOU’RE DISGUSTING

You are my sunshine

Facial expression and Tone of voice (prosody)

Emotional Relevance: pos or neg

In Paul Ekman’s research, he showed these photos of faces depicting a range of emotions to people in different cultures, asking them what emotions were shown.
YOU LOOKIN’ AT ME?

DISGUSTING
ME: I’m Dirt

I’M DIRT: AN OBJECT OF DISGUST

DELIGHTFUL
ME

I’M LOVABLE: AN OBJECT OF DELIGHT

In Paul Ekman’s research, he showed these photos of facial expressions to people in different cultures, asking them to identify the emotions expressed.
Dr. Tottenham is an Associate Professor in the Department of Psychology at Columbia University. She received her Ph.D. at the University of Minnesota in Developmental Psychology and Neuroscience and trained at the Sackler Institute for Developmental Psychobiology at Weill Cornell Medical College. Her research focuses on emotional development and associated neurobiology.

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SOCIAL BUFFERING: TAMING THE CHILD’S MID-BRAIN DEFENSE SYSTEM

SOCIAL BUFFERING

HYPERVIGILANCE: LOCUS COERULEUS (NOREPINEPHRINE)

PAG: DEFENSIVE BEHAVIORS (FIGHT/FLIGHT/FREEZE)

HPA: STRESS RESPONSE SYSTEM (CORTISOL, CRH, ETC)

SAFE ENGAGEMENT

AMYGDALA
NEVER AGAIN: THE INNER HULK

I’VE GOT YOUR BACK, KID. NOBODY’S GONNA HURT YOU AGAIN

I’M HELPLESS!
NETWORK MODEL OF BRAIN FUNCTIONING

DEFAULT MODE NETWORK: INTERNAL FOCUS - PERSONAL

EXECUTIVE NETWORK: ATTENDING TO EXTERNAL TASKS - NOT PERSONAL

SN - SALIENCE NETWORK

DMN - DEFAULT MODE NETWORK

EN - EXECUTIVE NETWORK

WHEN SALIENCE IS VERY HIGH, ESPECIALLY WHEN THE VALENCE IS NEGATIVE, INTERFERES WITH FUNCTIONING OF BOTH THE EN AND DMN

STRESS REACTIONS

SELF DEFENSE

AFFECT REGULATION WORK IN THERAPY: TARGETING THE SALIENCE NETWORK

SALIENCE NETWORK - PERSONAL VALENCE (POS/NEG) AND INTENSITY
Social Pain Management: The Opioid Defense System

Uh-oh! I better not cry or be seen. I will use my opioids to block the pain so I won’t need comfort.
Attachment and the Separation Distress System: When There is No Social Bufferer..........

“When we begin to understand the nature of the separation distress system at the neurobiological level, we may learn how to disentangle the damage wrought by emotional misfortunes” Jaak Panksepp, 2001

The Separation Call And Maternal Response System: The Anterior Cingulate Cortex (ACC)

Reactivating the separation distress system is crucial for helping defensive children learn to trust.
EXPERIENCE-INDUCED GOOD SURPRISE: WHEN ENGAGING WITH A CAREGIVER IS AN UNEXPECTEDLY POSITIVE EXPERIENCE

WHEN A CAREGIVER OR THERAPIST EMBRACES THE HULK

POSITIVE PREDICTION ERROR IN THE CHILD’S BRAIN: THIS IS WEIRDLY GOOD!!!!
WHEN AN ADULT RESPONDS IN KIND TO A CHILD’S MISTRUSTING, DEFENSIVE BEHAVIOR, THERE IS NO “NEWS OF A DIFFERENCE”, JUST FURTHER REINFORCEMENT OF THE CHILD’S AUTOMATIC MISTRUST.
GOOD CARE: BUFFERING THE DEFENSE SYSTEM, AWAKENING THE PREFRONTAL CORTEX, FOSTERING CONNECTIONS
Adult’s compassionate state of mind towards the child enables the adult to send calming nonverbal messages to the child’s amygdala, facilitating the switching process in the child’s brain from defensiveness to engagement.
NEUROBIOLOGY OF SOCIAL REVERSAL LEARNING: DOPAMINE, ANTICIPATION, AND SURPRISE.... POSITIVE PREDICTION ERRORS IN THE PREFRONTAL CORTEX

DOPAMINE NEURONS LEARN WHAT TO APPROACH AND AVOID AND HOW TO DO IT

THEN THE DOPAMINE NEURONS FIRE IN ANTICIPATION OF POSITIVE OR NEGATIVE REACTIONS FROM OTHER PEOPLE

PACEFUL PARENTING CAN SURPRISE THE DOPAMINE SYSTEM WITH UNPREDICTABLY POSITIVE REACTIONS TO A CHILD WHOSE BRAIN IS EXPECTING REJECTION/ABUSE

POSITIVE PREDICTION ERRORS: PPEs SUPPORT REVERSAL LEARNING
PACE PROMOTING “INTERSTATE”, AFFECTIVE TRAVEL: FROM ANGER TO SURPRISE TO CURIOSITY TO SADNESS

REAWAKENING THE BLOCKED POTENTIAL FOR THE KID TO SAFELY FEEL SAD AND RECOVER THE ABILITY TO SEEK COMFORT

PACE PROMOTING “YOU’RE WEIRD” POSITIVE PREDICTION ERRORS (PPEs)
Conflict resolution: APPROACH/AVOID

REGULATION
REFLECTION
REVERSAL LEARNING
REAPPRAISAL
reflection
reversal
regulation
ADULT

CHILD

DDP: PACING THE CHILD’S JOURNEY FROM BLOCKED TRUST TO TRUST