Mentalization, trauma and the development of the self

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Some of the Mentalizing Mafia

- UCL/AFC/Tavistock
  - Prof George Gergely
  - Professor Pasco Fearon
  - Professor Mary Target
  - Prof Anthony Bateman
- University of Leuven
  - Dr Patrick Luyten
  - Dr Liz Allison
  - Professor Alessandra Lemma
  - Professor Eia Asen
  - Dr Trudie Rossouw
  - Dr Dickon Bevington

Prof. Anthony Bateman
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  - Dr Trudie Rossouw
  - Dr Dickon Bevington

Professor George Gergely
And European recruits to the ‘Family’

- Dr Dawn Bales
- Prof Martin Debané
- Professor Svenja Taubner
- Dr Tobi Nolte
- Professor Finn Skårderud
- Professor Sigmund Karterud
- Dr Mirjam Kalland

- Bart Vandeneede
- Annelies Verheught-Pleiter
- Rudi Vermote
- Joleien Zevalkink
- Bjorn Philips
- Peter Fuggle
More mafiosi (The American branch)

- **Menninger Clinic/Baylor Medical College/U Laval/Harvard**
  - Dr Jon Allen
  - Dr Lane Strathearn
  - Dr Karin Ensink
  - Dr Read Montague

- **Yale Child Study Centre**
  - Prof Linda Mayes

- **UCL & Catholic University, Santiago**
  - Dr Carla Sharp
  - Dr Efrain Bleiberg
  - Professor Lois Choi-Kain
  - Dr Elisabeth Newlin
  - Nicolas Lorenzini
Trauma exposes the **limits of the categorical, disease-oriented model of psychopathology**

Trauma  Trauma  Trauma  Trauma  Trauma  Trauma

PTSD  Depression  ED  SUD  Anxiety
Psychological trauma is a transdiagnostic vulnerability factor.

Multifinality: one specific developmental factor may lead to different developmental outcomes, depending on its interaction with other factors.
Early adversity as an *ecophenotype* (Teicher & Samson, 2013).

- **Earliest** age at *onset* of psychopathology
- Greater symptom *severity*
- Higher levels of *comorbidity* (also with somatic)
- Greater risk for *self harm* and *suicide*
- High risk of *re-victimisation* and other *interpersonal problems*
- Poorer *response to treatment*

**Equifinality**: patients with the same diagnostic label differ considerably in the extent to which they experienced early adversity but those with a history show similarities.
Four key findings on early adversity

• Early adversity, and (chronic) trauma leads to dysfunctions in the human stress system (HPA axis) ➔ increased vulnerability for variety of psychological and (functional) somatic disorders, probably mediated by “programming” effects on the HPA axis but also on a wider range of biological systems and associated biomediators (neurotransmitter systems, the immune system, and pain-regulating systems).

• Critical time windows in the development of the human stress system that extends into adolescence or early adulthood ➔ HPA axis overactivity and may switch into HPA hypo(re)activity as a result of the wear and tear of chronic stress (i.e., a freeze/faint state).

• There has been a shift away from the study of main effects to the investigation of gene–environment correlations and epigenetic effects.

• Research on early adversity clearly suggests that the distinctions between many psychiatric disorders and certain functional somatic (e.g., chronic fatigue) and somatic diseases (e.g. “lifestyle-related” diseases) are to some extent arbitrary ➔ vulnerability for a spectrum of disorders that are related to each other at the etiopathogenic level.
Transdiagnostics in mental health

- DSM-III abolishes neurosis creating problems:
  - **Comorbidity** of diagnoses: 50% of individuals who meet criteria for one diagnosis are likely to meet criteria for another (Kessler, Chiu, Demler, Merikangas, & Walters, 2005; Merikangas et al., 2010)
  - **Heterogeneity** within diagnostic categories in terms of presentation, etiology and outcome (Kapur et al. 2012)
  - **Multiplicity of guidelines** of treatment specific to each of these comorbid and heterogeneous groups (over 100 NICE MH Guidance)

- Threshold (false positive) problem in diagnosis
  - One out of five boys are diagnosed with ADHD (Visser et al., 2014).

- Increasingly treatments are transdiagnostic
  - **Same protocol** for a range of disorders (e.g. ACT: Hayes, 2015)
  - **Individually** structured protocols for the same diagnoses (Chorpita & Daleiden, 2014).
The bi-factor model of psychopathology

Where X1-X10 are symptoms or diagnoses
Model B: Hierarchical / Bifactor

The p factor appears to capture an underlying propensity for any kind of psychopathology.

- Replicated across numerous samples
  - in children (Lahey et al., 2015; Murray, Eisner, & Ribeaud, 2016),
  - adolescents (Blanco et al., 2015; Carragher et al., 2016; Laceulle, Nederhof, van Aken, & Ormel, 2015; Lahey et al., 2012; Murray et al., 2016; Noordhof, Krueger, Ormel, Oldehinkel, & Hartman, 2015; Patalay et al., 2015; Tackett et al., 2013)
  - adults (Caspi et al., 2014; Lahey et al., 2012),
Executive function and p factor

- **p factor predicted by executive function deficits** (Caspi et al., 2014)
  - self control,
  - self-regulation, and
  - memory control;

- **Transactional relationship** between environment and executive function into young adulthood (Dishion, 2016)

- **Prognostic value of poor self-regulation** in various forms of problem behavior health problems through adolescence and adulthood (Moffitt et al., 2011).
Mechanisms of Executive Dysfunction in Youth

Executive function (working memory, attention, flexibility)

**Disruption** of executive function is present **in most** neuropsychiatric disorders

Consequences of executive deficits may be particularly **acute in childhood and adolescence** and they may include increased interpersonal **conflict**, decreased **academic** achievement, and **risk-taking** behaviour

Determining **the specificity of executive dysfunction across disorders confusing** because of the high comorbidity (40%) of conditions

Shanmugan et al., 2016
Mechanisms of Executive Dysfunction in Youth

N= 1,129 youths (mean age = 15.5 years SD=3.4; 520 male)

Assessment:
Structured Screening Interview: GOASSESS

Comorbidity was common, with more subjects meeting criteria for more than one category (N=529) than for a single category N=249)

Bifactor confirmatory model of item-level data from GOASSESS

Produces orthogonal scores from correlated traits

Four factors:

General psychopathology factor (p factor)

Anxious-misery (mood and anxiety symptoms)

Psychosis spectrum symptoms

Behavioural symptoms

Fear (phobias) symptoms

Shanmugan et al., 2016
FIGURE 1. Bifactor Model of Common and Divergent Dimensions of Psychopathology Across Categorical Screening Diagnoses

Shanmugan et al., 2016
Dimensional approach to examine Executive Dysfunction: Working Memory fMRI Task
Association of dimensions of psychopathology with executive network activation

Overall psychopathology
- Frontal pole
- Anterior cingulate
- Anterior insula
- Thalamus
- Precuneus
- Frontoparietal
- Thalamic
- Cerebellar

Behavioral symptoms
- Frontoparietal
- Thalamic
- Cerebellar

Psychosis-spectrum symptoms
- Left dorsolateral prefrontal cortex

Anxious-misery
- Within the executive network, including:
  - The dorsolateral prefrontal cortex
  - Anterior cingulate cortex

HYPOACTVATION
-Overall Psychopathology
- Behavioral Symptoms
- Psychosis-Spectrum Symptoms
- Anxious-Misery

HYPER-ACTVATION
- Within the executive network, including:
  - The dorsolateral prefrontal cortex
  - Anterior cingulate cortex

Shanmugan et al., 2016
A general psychopathology factor in early adolescence

Praveetha Patalay, Peter Fonagy, Jessica Deighton, Jay Belsky, Panos Vostanis and Miranda Wolpert

Background
Recently, a general psychopathology dimension reflecting common aspects among disorders has been identified in adults. This has not yet been considered in children and adolescents, where the focus has been on externalising and internalising dimensions.

Aims
Examine the existence, correlates and predictive value of a general psychopathology dimension in young people.

Method
Alternative factor models were estimated using self-reports of symptoms in a large community-based sample aged 11–13.5 years (N=23,477), and resulting dimensions were assessed in terms of associations with external correlates and future functioning.

Results
Both a traditional two-factor model and a bi-factor model with a general psychopathology bi-factor fitted the data well. The general psychopathology bi-factor best predicted future psychopathology and academic attainment. Associations with correlates and factor loadings are discussed.

Conclusions
A general psychopathology factor, which is equal across genders, can be identified in young people. Its associations with correlates and future functioning indicate that investigating this factor can increase our understanding of the aetiology, risk and correlates of psychopathology.

Declaration of interest
None.
Bi-factor model with the item-loadings

Community-based sample aged 11-14 years (N= 23,477)

Logistic regression predicting future caseness

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BPD as the ‘g/P-factor’ of personality pathology (Sharp et al 2015)

- Evaluated a **bifactor model** of PD pathology in which a **general (g) factor** and several **specific (s) factors** of personality pathology account for the covariance among PD criteria

- **966 inpatients** were interviewed for 6 DSM–IV PDs using **SCID-II**

- Confirmatory analysis **replicated DSM-IV PDs**, with high factor correlations
P factor in PDs: the DSM factor structure
Sharp et al., 2015 *Journal of abnormal psychology*

N=966 inpatients

**BPD**
- Avoids abandonment
- Interpersonal instability
- Identity disturbance
- Self-harming impulsivity
- Suicidality
- Affective instability
- Emptiness
- Intense anger
- Transient dissociation

**AVPD**
- Avoids social work
- Perfectionistic
- Socially inhibited
- Views of self as inept
- No risks or new activities

**OCPD**
- Orderly
- Reluctance to delegate
- Miserly
- Rigidity
- Odd behaviour/appearance
- Lacks close friends
- Lacks empathy
- Envious
- Lacks remorse

**SZTPD**
- Ideas of reference
- odd beliefs
- Odd behaviour/appearance
- Lacks close friends
- Lacks empathy
- Envious
- Lacks remorse

**NPD**
- Grandiose
- Preoccupied with fantasies
- Odd thinking/speech
- Suspicious
- Odd behaviour/appearance
- Lacks close friends
- Lacks empathy
- Envious
- Lacks remorse

**ASPD**
- Failure to conform
- Deceitfulness
- Impulsivity
- Irritable, aggressive
- Disregard for safety
- Irresponsible
- Lacks remorse

**UNACCEPTABLE MODEL FIT**

Comparative Fit Index (CFI) <95
Tucker-Lewis Index (TLI) <95
## P factor in PDs: the DSM factor structure

N=966 inpatients

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In spite of internal coherence at a criterion level, DSM personality disorders, within individuals, are not neatly separable. They are not discrete phenomena.

Sharp et al., 2015 *Journal of abnormal psychology*
P factor in PDs: does EFA replicate the DSM factor structure?

Excellent model fit:

\[ X^2(897) = 1110.58, \quad p < .001 \]

RMSEA = .02 [ .01, .02 ], \quad p = 1

CFI = .97

TLI = .97

Sharp et al., 2015 Journal of abnormal psychology

N=966 inpatients
P factor in PDs: Exploratory bifactor model

Excellent model fit:
\[ X^2(897) = 1030.09, \ p < .001 \]
RMSEA = .02 [.01, .02], \( p = 1 \)
CFI = .98
TLI = .97

Only factor loadings >|30| are shown

Average load = .68
Average load = .47
Average load = .28
Average load = .31
Average load = .27
Average load = .53
Average load = .81
100% of criteria marking the specific factor
Average load = .73
78% of criteria
Average load = .65
100% of criteria
Average load = .31
Average load = .27
Average load = .53

Sharp et al., 2015 Journal of abnormal psychology
The ‘p’ factor (Caspi et al., 2014)

Mechanism(s) accounting for persistence

Mechanisms accounting for specific diagnoses

Ungendered chronic conditions

Partially gendered Personality disorder

Gendered ‘Neurotic’ conditions

Impairment

Externalizing

Internalizing

Male

Female

Persistence

Persistence

Gendered
TRAUMA

SUD

ASPD

Suicidal ideation

Self-harm

Withdrawal

Lower earnings

Delinquency

Fewer assets

Aggression

Somatic problems

Quasi-autism

Reduced wellbeing

PTSD

Depression

Self-esteem issues

Withdrawal

Anger

Impaired mentalizing capacity

Delinquency

Insecure attachment

Hyperactivity

Elevated basal cortisol

Indiscriminate friendships

Impaired memory and executive function

Anxiety

Depression

Interpersonal problems

Hyberactivity

Increased basal cortisol

Impaired mentalizing capacity

Reduced wellbeing

Increased risk of chronic diseases

Impaired memory and executive function

Diminished problem-solving capacity

Reactuve attachment disorder

Indiscriminate friendships

Poorer literacy and numeracy

High comorbidity

Increased risk of chronic diseases

Increased basal cortisol

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Reactuve attachment disorder

Indiscriminate friendships

Poorer literacy and numeracy

High comorbidity

Increased risk of chronic diseases
Trauma or Resilience or Salutogenesis (Antonovsky & Sagy, 1986)

Salutogenesis
An assets approach

- Gratitude
  (McGullough)

- Self-efficacy
  (Bandura)

- Hardiness
  (Kobasa)

- Empathy
  (Eisenberg)

- Humour
  (Martin)

- Learned resourcefulness
  (Rosenbaum)

- Learned optimism
  (Seligman)

- Learned hopefulness
  (Zimmerman)

- Sense of coherence
  (Antonovsky)

- Emotional intelligence
  (Goleman, Akerjordet et al)

- Cultural capital
  (Bourdieu)

- Quality of Life
  (Lindström)

- Connectedness
  (Blum)

- Social capital
  (Putnam)

- Resilience
  (Werner)

- Will to meaning
  (Frankl)

- Empowerment
  (Freire)

- Ecological system theory
  (Bronfenbrenner)

- Locus of control
  (Rotter)

- Wellbeing
  (Diener)

- Coping
  (Lazarus)

- Action competence
  (Bruun Jensen)

- Interdiciplinarity
  (Klein)

- Attachment
  (Bowlby)
What could mediate such a bewildering range of outcomes across multiple domains?
What could mediate such a bewildering range of outcomes across multiple domains?

- Psychopathology
- Physical Health
- Educational
- Relationships
- Economic
- Occupational

Early adversity

Insecure/disorganized attachment?
Mentalizing problems?
A working definitions of mentalization and trauma

- Mentalizing is a form of imaginative mental activity, namely, perceiving and interpreting human behaviour in terms of *intentional* mental states (e.g. needs, desires, feelings, beliefs, goals, purposes, and reasons).
Successful mentalizing of people and relationships

The person...

- Is relaxed and **flexible**, not ‘stuck’ in one point of view
- Can be **playful**, with humour that engages rather than hurting or distancing
- Can solve problems by **give-and-take** between own and others’ perspectives
- Describes their **own experience**, rather than defining other people’s experience or intentions
- Conveys ‘**ownership**’ of their **behaviour** rather than a sense that it ‘happens’ to them
- Is **curious** about other people’s perspectives, and expect to have their own views extended by others’
Some Free Publicity

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Articles Published Citing Papers About Mentalizing or Mentalization

Google Ngram of “mentalization”

Google’s Ngram Viewer shows the percentage a word is present in a corpus of 5.2 million books published from the years 1500 to 2008.
certainty. Hammond has conducted a series of careful urinal analyses, for the purpose of ascertaining the changes in the composition of the urine incident to increased mentalization. From these experiments he is led to draw the following conclusions:

(1.) That increased mental exertion augments the quantity of urine.

(2.) That, by its influence, the urea, chlorine, and phosphoric and sulphuric acids are increased in quantity.

(3.) That the uric acid, on the contrary, is very materially reduced in amount.

(4.) That diminished intellectual exertion produces effects directly contrary to all the above.

More recently, Byasson has demonstrated that the expenditure of energy is of importance in physiological processes. In more, that of the fluid portion of the urine, the percentage of phosphoric acid is regulated by the amount of mental exertion. The above observations and experiments are of great importance in physiology.

For a more detailed account of these experiments than is admissible in a work of this character, see my monograph on "Brain Exhaustion," D. Appleton & Co., New York.
The development of the ‘mentalizing self’

- The capacity to mentalize emerges through interaction with the caregiver:
- The quality of the attachment relationship

➢ If the parent is:
  - Able to reflect on infant’s intentions accurately
  - Does not overwhelm the infant

➢ Then this:
  - Assists in developing affect regulation
  - Helps develop child’s sense of a mind and of a reflective self
How Attachment Links to Affect Regulation

The forming of an attachment bond

Down Regulation of Emotions

BONDING

EPISTEMIC

TRUST
Making sense of the mentalizing model

- **Parent** forms an *internal representation* of the infant as an intentional being, which is then internalised by the infant.

- **Secondary representation** formed in the infant’s mind.
Affect & Self Regulation Through Mirroring

Representation of self-state: Internalization of object’s image

symbolic organisation of internal state

contingent display

expression of understood affect

Expression
Reflection
Resonance

Constitutional self in state of arousal

Infant

Psychological Self: 2nd Order Representations

Fonagy, Gergely, Jurist & Target (2002)

Physical Self: Primary Representations

With apologies to Gergely & Watson (1996)

CAREGIVER
Shared neural circuits for mentalizing about the self and others (Lombardo et al., 2009; J. Cog. Neurosc.)

- **Self mental state**
- **Other mental state**
- **Overlapping for Self and Other**
Relational Aspects of Mentalization

- Overlap between neural locations of mentalizing self and other may be linked to intersubjective origin of sense of self
  - We find our mind initially in the minds of our parents and later other attachment figures thinking about us
  - The parent’s capacity to mirror effectively her child’s internal state is at the heart of affect regulation
  - Infant is dependent on contingent response of caregiver which in turn depends on her capacity to be reflective about her child as a psychological being
  - Failure to find the constitutional self in the other has potential to profoundly distort the self representation (exaggerated mirroring of child’s anxiety aggravates anxiety rather than soothe)
  - The same applies to child with inadequate sense of independent self within therapeutic relationship
Summary of the dialectic developmental model

- Mother’s mentalizing her own childhood before the birth of her child predicts child’s security of attachment.
- This is mediated by her capacity to mentalize her child which in turn predicts her capacity to respond to the child’s intentions (not take it personally).
- Being responded to in a mentalizing way enhances the child’s understanding of the intentions of others (a reflective self).
- Twin studies show this is not a genetic process but rests on baby’s need to discover what strategies will best suit it in the world it has arrived into.
- It all happens at the level of the brain.
Normal variation in early parental sensitivity:
Predicts child structural brain development
(total N = 191 dyads, 50% girls)

188 mother-child dyads

161 father-child dyads

6.6 weeks

1 year

3 years

4 years

6 years

8 years

Measurement of:
• Ventricular volume
• Head circumference

Dyadic 5 minute free-play

With primary caregiver
Assisting the child in a task that is too difficult
Parents complete CBCL

With both parents
Measurement of non-verbal IQ

Structural MRI scan

Maternal Sensitivity

• Predicts larger grey matter volume
  • $\beta = 0.13, p = 0.0.3$
• Predicts total brain volume (trend)
  • $\beta = 0.13, p = 0.0.3$

Paternal sensitivity shows similar predictions, but nonsignificant

Normal variation in early parental sensitivity:

Parental sensitivity (both mother and father)

Parental sensitivity

Brain structure measures

- Total brain volume (volume z score)
- White matter (volume z score)
- Gray matter (volume z score)
- Right hemisphere cluster (thickness mm)
- Left hemisphere cluster (thickness mm)

Controlling for:
- Child gender
- Child age
- Parental education
- Child behavioural and emotional problems

Left hemisphere cluster: precentral, postcentral and caudal middle frontal gyrus

Right hemisphere cluster: precentral, caudal middle frontal, and rostral middle frontal gyrus
Adversity becomes traumatic when it is compounded by a sense that one’s mind is alone: normally, an accessible other mind provides the social referencing that enables us to frame a frightening and otherwise overwhelming experience.

Allen & Fonagy (2010)
A simple(istic) neurobiological model

- Trauma
- Inadequate modulation by mPFC
- Hyperresponsiveness in amygdala to stress

Onslaught of alien self

Decrease in mentalizing ability

Return to prementalizing modes of cognitive functioning

Increase in stress

Decrease in mentalizing ability
BPD, trauma and non-mentalizing modes

• **Psychic equivalence**
  – Loss of awareness of internal and external reality: flashbacks, avoidance behaviours, refusal to think about events and problems

• **Pretend mode**
  – Dissociation: experience of unreality, blanking out, being in a ‘waking dream’

• **Teleological stance**
  – Alter thoughts and feelings through action: drug use, alcohol, bingeing and purging, self-harm
Trauma
Destructive effect on cognition

UNMENTALIZED
FEELINGS

Pain
Fear
Disbelief
Loneliness

TELEOLOGICAL
MODE ➔
REENACTMENT

Anger
Disgust
Guilt

PRETEND MODE ➔
DISSOCIATION

PSYCHIC
EQUIVALENCE
Or it can become the blueprint around which psychic experience is organised....

Normal, ordinary interpersonal disappointment, with its normal feelings, trigger the encapsulated traumatic feelings and is subjectively experienced AS the trauma.
Confusion about past and present
Overwhelming emotional states
Collapse of capacity to mentalize
Psychic equivalence, hypermentalizing and dissociation
Teleological mode- Acting out
Summary of some related developmental findings

Childhood maltreatment has a negative impact on **social-cognitive competencies** in individuals who are not yet explicitly diagnosed with a mental disorder:

- less **symbolic** and less **child-initiated** dyadic **play**
- fail to show **empathy** when witnessing distress in children
- **poor affect regulation**, which contributes to later psychopathology and peer rejection
- fewer **references** to their **internal states**
- struggle to **understand emotional expressions**, particularly facial expressions
- delayed understanding of **theory of mind** in maltreated children
- capacity to **parse complex and emotionally charged representations** of the parent and of the self deteriorate with development in children with a history of maltreatment
EEG responses for Angry faces

Maltreated group

Comparison group

(Source: Cicchetti & Curtis, 2005, Dev. & Psychopath.)
Failure to differentiate between threat-related and positive emotion cues in *healthy adults* with childhood interpersonal or adult trauma

- **489 Healthy adults**
- Childhood Trauma exposure assessed with ELSQ
- Adult Trauma assessed with CIDI
- ERP acquisition: N170 amplitudes registered in reference to conscious and non-conscious face stimuli from Temporal sites (T5 and T6)

Chu et al., 2016
Childhood trauma-exposed adults failed to show significantly increased N170 responses to Happy relative to Angry faces during non-conscious processing.

- Childhood interpersonal trauma exposure is associated with a failure to differentiate between non-threat (or positive) and threat-related emotion cues.
- Generalized responsivity to non-conscious non-threat ➔ they approach happy with suspicion.

Chu et al., 2016
Measuring Mentalization in children: CRFS

- Child Reflective Functioning Scale
  - Adapted from the Adult Reflective Function Scale (Fonagy et al., 1998)
  - For use with the Child Attachment Interview
    - General Reflective Function ($\alpha = .94$) and two subscales:
      - Child Reflective Function regarding Self
      - Child Reflective Function regarding Other
    - It correlates significantly with age ($r = .28$, $p<0.01$)

Mentalization in abused children

Mentalizing of both other and self reduced in abused children.

Intra-familiar abuse has greater impact on mentalizing than extra-familiar.

Unresolved childhood trauma in the transition to parenthood
The development of an index of RF-T

To obtain an index of RF-T, the Reflective Function Scale for the AAI is applied to those questions used to rate unresolved trauma.

- e.g. “Do you feel the experience of having been physically abused by your father affects you now as an adult?”

N= 97 expecting women with history of CA&N, aged 18 to 41 years (M= 28.46, SD= 5.58)

General Reflective Function (RF-G)
and
Reflective Function of Trauma (RF-T)

- Were correlated \( r = .61, p < .001 \)
- RF-T was significantly lower than RF-G in this sample with history of CA&N \( t_{63} = 4.93, p < 0.001 \)
- There was no association between number of traumatic events and RF-T \( (\beta = 0.07, t_{35} = 0.48, p = 0.64) \)
- or RF-G \( (\beta = -0.04, t_{55} = -0.43, p = 0.67) \)

RF-T was the best single predictor of

- engagement in the pregnancy \( (\beta = -0.42; p = 0.01) \)
- positive feelings regarding the pregnancy \( (\beta = -0.37; p = 0.03) \)
- sense of commitment toward maternity \( (\beta = -0.35; p = 0.03) \)
- and overall quality of relationship with partner \( (\beta = -0.57; p < 0.001) \)
Mentalization of parental trauma
Implications for intergenerational transmission of attachment

- 20-month longitudinal design
  - N=157 mother-infant dyads; mothers aged 28.77, SD=5.57
- Administered AAI to expecting mothers who experienced trauma
  - General Reflective Function (RF-G)
  - Reflective Function specific to Trauma (RF-T)
- Babies were evaluated by SSP at 17 months of age

Maternal trauma predicts attachment disorganisation

The number of traumatic events suffered by mothers predicts infant attachment disorganisation

Berthelot, Ensink, Bernazzani, Normandin, Luyten & Fonagy, 2015
Mentalization of parental trauma moderates outcome of CA&N on disorganised attachment

Implications for intergenerational transmission of attachment

- Prediction of infant attachment disorganisation is twice as powerful (22% vs 41% of variance explained) when maternal RF-T is added to a model containing maternal unresolved trauma as only predictor.
  - Unresolved trauma: $\beta=2.54^{**}$; RF-T: $\beta=-1.50^*$

- Maternal RF-G is not a significant predictor of infant’s disorganised attachment

Berthelot, Ensink, Bernazzani, Normandin, Luyten & Fonagy, 2015
Mothers’ unresolved trauma blunts amygdala response to infant distress

(Kim, Fonagy, Allen & Strathearn, 2014)

Absence of trauma: Own baby with sad expression triggers largest amygdala response
When trauma is unresolved: Response to own baby’s sad face is markedly reduced.
Measuring parental RF using the Squiggle

- Initially developed by Winnicott (1971)
  - Adapted by Ensink, Normandin & Fonagy (2000)
- Mother needs to **direct** the creation of **6** sequenced **drawings** to produce a story
- Mother is free to comment and ask questions to the child
- It poses challenged faced by mothers in everyday interaction with their children:
  - Provide **structure**
  - Consider the **child’s interests** and reactions
  - Allows for a **playful interaction**
Measuring parental RF using the Squiggle

Those subscales loaded onto 3 distinct factors:

**Reflective orientation** (α=.87)
- Interest in the subjective experience of the child
- Affective communication
- Capacity to play

**Affectionate support of agency** (α=.85)
- Support of investment/agency of the child
- Expression of affection

**Negativity** (α=.74)
- Aggressive control
- Hostility

* The items Withdrawal/Disengagement did not load on any factor

**Transactional processes RF using the Squiggle**

**Relationships with child sexual abuse and psychopathology**

N= 158 mother infant dyads
- 88 girls
- 70 boys

N= 89 children experienced sexual abuse
- 54 girls
- 35 boys

**Mothers of sexually abused children in comparison with not abused:**

- Showed **less reflective** orientation ($t_{156} = 2.826, p = 0.005$)
- **Less affectionate** support of agency ($t_{156} = 2.668, p = 0.009$)
- **No differences** regarding negativity ($t_{156} = -0.622, p = 0.535$)

### Correlations with PDI

<table>
<thead>
<tr>
<th>Reflective orientation</th>
<th>Affectionate support of agency</th>
<th>Negativity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>.45</strong>*</td>
<td><strong>.30</strong></td>
<td><strong>-.40</strong></td>
</tr>
<tr>
<td>Reflective orientation</td>
<td>Affectionate support of agency</td>
<td>Negativity</td>
</tr>
<tr>
<td>Externalising problems ($r = -.18^*$)</td>
<td>Internalising ($r = -.15^*$)</td>
<td>Externalising ($r = .15^*$)</td>
</tr>
<tr>
<td>Delinquency ($r = -.14^{+\dagger}$)</td>
<td><strong>Externalising</strong> ($r = -.19^*$)</td>
<td>TR delinquency ($r = .23^{+\dagger}$)</td>
</tr>
<tr>
<td>Aggression ($r = -.16^*$)</td>
<td>Attention problems ($r = -.16^*$)</td>
<td></td>
</tr>
<tr>
<td>Dissociation ($r = -.14^{+\dagger}$)</td>
<td>Delinquency ($r = -.17^*$)</td>
<td></td>
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<tr>
<td><strong>Teacher reported (TR) internalising ($r = -.29^*$)</strong></td>
<td><strong>Aggression ($r = -.19^*$)</strong></td>
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<tr>
<td><strong>TR externalising ($r =-.36^*$)</strong></td>
<td><strong>Dissociation ($r = -.19^*$)</strong></td>
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<tr>
<td><strong>TR social problems ($r = -.39^{</strong>}$)**</td>
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<td><strong>TR attention problems ($r = -.35^{</strong>}$)**</td>
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</tr>
</tbody>
</table>

* $p<.05$  
** $p<.01$  
$^{+\dagger}$ $p<.08$

PDs are enduring behaviors, their features include an intrapersonal component (dysregulation of arousal, impulse, and affect), an interpersonal component (dysfunctional relationship patterns), and a social component (which creates conflicts with others and with social institutions). Attachment theory accounts for these four characteristics of PDs and provides an ideal standpoint to understand these disorders, integrating psychological, psychiatric, genetic, developmental, neuroscientific, and clinical perspectives.

Why is reduced mentalizing having such extensive effect on functioning? Can it all be explained by attachment?

OK! ATTACHMENT IS NOT EVERYTHING!
Attachment not universal: Historically childhood is a state of enduring murderous abuse and brutality

(Ariès, 1973; Stone, 1977)

Infanticide in 19th C Milan was 30-40% (Marten, 2010)

Women living in extremely deprived conditions in Brazilian ghettos, allowing the death of their infants with apparently little sorrow, but become loving mothers to subsequent children or to children who they previously gave up on as hopeless cases, but appear to go on to survive

Different social environment are likely to trigger different attachment styles as more adaptive
What could mediate such a bewildering range of outcomes across multiple domains?

- Early adversity
- Disruptions in the development of a capacity for **epistemic trust**
- Psychopathology
- Physical
- Educational
- Relationships
- Economic
- Occupational
The theory of natural pedagogy and epistemic trust (Gergely & Csibra, 2008; Fonagy & Allison, 2014)

- New form of evolution (late Pleistocene) based on learning and the transmission of cultural knowledge
As soon as you need to create tools to make tools, the process of tool-making becomes distanced from its ultimate function, opaque in its intent and necessitates communication.
The theory of natural pedagogy and epistemic trust (Gergely & Csibra, 2008; Fonagy & Allison, 2014)

- New form of evolution (late Pleistocene) based on learning and the transmission of cultural knowledge
- The challenge of discerning of epistemic trustworthiness and the need for EPISTEMIC VIGILANCE!

ET= Epistemic Trust
The theory of natural pedagogy and epistemic trust (Gergely & Csibra, 2008; Fonagy & Allison, 2014)

- New form of evolution (late Pleistocene) based on learning and the transmission of cultural knowledge

- The challenge of discerning of epistemic trustworthiness and the need for EPISTEMIC VIGILANCE!

- The pedagogic stance is triggered by ostensive communicative cues (E.G. turn-taking contingent reactivity, eye contact)

- Ostensive cues have in common
  - Person recognized as a self
  - Paid special attention to (noticed as an agent)
Triggering the Pedagogical Stance

- Ostensive cues **function to trigger epistemic trust**:
  - **Opening** channel to **receive** knowledge about social and personally relevant world (CULTURE)
  - Going **beyond** the **specific experience** and acquire knowledge relevant in many settings
  - Triggers opening of an evolutionarily protected **epistemic channel** for knowledge acquisition

- **Mimicry** may be protected by human evolution because it generates epistemic trust
  - We **imitate infants** to create epistemic trust
  - **Social smile** (recognition of self) increases imitation because smile generates epistemic trust and opens channel to receive knowledge
Experimental illustration of ostensive cues

Gergely, Egyed et al. (2013)

Subjects: 4 groups of 18-month-olds

Stimuli: Two unfamiliar objects
1: Baseline – control group
No object-directed attitude demonstration

Simple Object Request by Experimenter A

Subjects: n= 20 Age: 18-month-olds
Ostensive Communicative Demonstration

Requester: OTHER person (Condition 1)
Learning from Attitude Expressions

18-month-olds

Ostensive Expression - Generalization
Non-Ostensive (Non-Communicative) Demonstration

Requester: OTHER person (Condition 2)
Learning from Attitude Expressions

18-month-olds

Ostensive Expression - Generalization

Non-Ostensive Expression - No Generalization
Condition 4: Non-Ostensive (Non-Communicative)

Demonstration Requester: SAME person
Learning from Attitude Expressions

18-month-olds

Ostensive Expression - Generalization

Non-Ostensive Expression - No Generalization

Non-Ostensive Expression - Person-Specific Attribution

Egyed et al., in prep.
Social Cues that Create Epistemic Trust

- **Attachment** to person who responded **sensitively** in early development is **special condition** for generating epistemic trust \(\rightarrow\) **cognitive** advantage of security \(\rightarrow\) including neural development (Van Ijzendoorn et al.)

- Generally any **communication** marked by **recognition** of the listener as **intentional agent** will increase **epistemic trust and** likelihood of **communication** being coded as
  - Relevant
  - Generalizable
  - To be retained in **memory as relevant**

- Feeling **contingently responded to** (mentalized) is the **quintessential ostensive cue** and therefore the primary biological signal that it is **safe to learn**
Meta-analytic studies of teacher effectiveness

- **John Hattie** is Professor of Education at the University of Auckland, New Zealand.
- **15 years research** and synthesizes over 800 meta-analytic studies relating to the influences on achievement in school-aged students.
- Is there a set of **predictors to good teaching outcomes** based on:
  - The child?
  - The home?
  - The school?
  - The curricula?
  - The teacher?

With grateful thanks to Dr Peter Fuggle
Meta-analytic studies of teacher effectiveness

• What makes a teacher the most effective?
  – It is teachers seeing learning through the eyes of students

• The key ingredients are:
  – Awareness of the learning intentions
  – Knowing when a student is successful
  – Having sufficient understanding of the student’s understanding
  – Know enough about the content to provide meaningful and challenging experiences

• Passion that reflects the thrills as well as awareness of the frustrations of learning.

With grateful thanks to Dr Peter Fuggle
Caregiver’s mentalizing of the infant acts as the prototypical ostensive cue.

Sensitive caregiving

Epistemic trust

Self-control & self-learning

Which enables...

This lays the foundations for...

Learning channel opens (selectively)

Learning about others

Secure attachment

Learning about the world

Successful navigation of social world

This lays the foundations for...

Mentalizing

Learning channel opens (selectively)
Maltreatment and the failure of epistemic trust

- An abusive or neglectful caregiving environment (the child is not mentalized)
  - Ostensive cues are either absent or undermined by fear or confusion
  - Epistemic vigilance is not relaxed
  - Intersubjective social experiences enhancing self-regulation (EF) weakened

- Epistemic mistrust (hypervigilance) develops
  - adults’ mind is not considered as a benign or reliable source of knowledge (deferential source – Sperber)
  - possible adult hatred, sadism, fear or indifference ➔ safer not to think about the caregiver’s mental states
Maltreatment and the failure of epistemic trust

- Once **epistemic trust is damaged** and the mind is partially **closed to** processing **new information**
  - **access** to exploring **different ways** of behaving and responding becomes **highly restricted**: 
- The presentation of **fresh information cannot** be **internalized** as personally relevant or meaningful
  - Knowledge (including social knowledge) is **not updated**
  - A subjective sense of being ‘**stuck in isolation**’ is created.
- Impaired epistemic trust serves to severely **diminish responsiveness to psychotherapeutic** intervention
In all 3 cases, the individual struggles to learn effectively about either self or world.

Learning channel is closed, indiscriminately open or both by turns.

Ostensive cues are not processed, were absent or misleading.

Mentalizing difficulties

- Absence of epistemic trust
  - Epistemic hyper-vigilance
  - Epistemic dilemma
  - Excessive credulity
  - Insecure/disorganized attachment
  - Problems understanding others
  - Problems navigating social world

Problems navigating social world

Epistemic dilemma

Insecure/disorganized attachment

Epistemic dilemma

Absence of epistemic trust

Excessive credulity

Ostensive cues are not processed, were absent or misleading
Building a social network begins early
When the capacity to form bonds of trust is shaky and tends to break down...
...we lose our safety net
Reconceptualising understanding not in terms of disease mechanisms...
...but as an absence of epistemic trust...
...which may once have been adaptive