“Attachment and mentalizing: Understanding the role of trauma and the family

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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

- 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’
Mentalization and Overlapping Constructs
Mindfulness

- Keeping one’s consciousness alive to the present reality
- **Observing** and describing one’s own experience whilst participating non-judgementally

- Two domains
  - Attention regulation
  - Acceptance and openness to experience

- Four Skills
  - Observing
  - Describing
  - Acting with awareness
  - Accepting **without judgment**
Multiple dimensions of mentalizing in psychotherapy

- Differentiating **self and other** in psychotherapy
  - **Adopting** the perspective of the other to the self
  - **Reducing** the impact of the other on the self

- Moving from **implicit - automatic** mentalization to **explicit – controlled** mentalization
  - Challenging automatic assumptions

- Elaborating internal representations of mental states of self and others - **external and internal** mentalizing
  - Challenging superficial judgements based on ‘appearances’

- Connect feelings with thoughts (**affect and cognition**)
  - Overcoming splitting of affect and cognition (the feeling of feelings)
Our sense of **self & capacity for self-regulation** are acquired through **interpersonal interaction**

Caregiver’s **marked mirroring of baby’s constitutional self-states** enables him to begin to **form representations of his experience**, laying the foundation for mentalizing
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
Affect & Self Regulation Through Mirroring

Psychological Self: 2nd Order Representations

Physical Self: Primary Representations

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

symbolic organisation of internal state

Constitutional self in state of arousal

Infant

Expression

Reflection

Resonance

CAREGIVER

With apologies to Gergely & Watson (1996)
Fonagy, Gergely, Jurist & Target (2002)
Shared neural circuits for mentalizing about the self and others (Lombardo et al., 2009; J. Cog. Neurosc.)

- Red: Self mental state
- Blue: Other mental state
- Green: 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**
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 mental energy is even attended with the consequences above stipulated from the action of phosphoric acid upon the bones. The reader found me in a monograph of mental exhaustion worthy of the attention of the scientific public; and in the above monograph, the subject of the origin of mental exhaustion, is treated with great length and precision.
Some Free Publicity

NEW! SLIGHTLY IMPROVED!

But hurry!
Only 2,000 copies left!

Washes brains whiter!

RECENTLY RELEASED!

Longer than the previous version!

Oxford University Press, PLC
Let the boy dream Ivan,
He is a born dilettante!

You will never amount to anything if you hold a ball like that!

I want to write my PhD on the “Use of low signal-to-noise ratio stimuli for highlighting the functional differences between the two cerebral hemispheres”.

You look smug now but you will lose your hair just like Dad.
A biobehavioral switch model of the relationship between stress and controlled versus automatic mentalization (Based on Luyten et al., 2009)
Why, how now, ho! from whence ariseth this?
Are we turn'd Turks, and to ourselves do that
Which heaven hath forbid the Ottomites?
For Christian shame, put by this barbarous brawl:

Dimensions of mentalization: implicit/automatic
vs explicit/controlled in Othello

Controlled                              Automatic

Love
Spurned/
Arousal
Dimensions of mentalization: implicit/automatic vs explicit/controlled in Othello

Controlled

Automatic

Lateral temporal cortex

Amygdala

Ventromedial PFC

Arousal
Dimensions of mentalization: implicit/automatic vs explicit/controlled

Psychological understanding drops and is rapidly replaced by confusion about mental states under high arousal

Controlled

Automatic

Arousal

That handkerchief which I so loved and gave thee

Thou gavest to Cassio.

By heaven, I saw my handkerchief in's hand.
Psychotherapist’s **demand to explore** issues that trigger intense emotional reactions involving conscious reflection and explicit mentalization are inconsistent with the patient’s ability to perform these tasks when arousal is high.
Mentalization: The basics

- Attachment and mentalization are **loosely coupled** systems existing in a state of partial exclusivity.

- Mentalization has its **roots in** the sense of being understood by an attachment figure,
  - it can be more **challenging to maintain** mentalization **in the context of an attachment relationship** (e.g. the relationship with the therapist) (Gunderson, 1996).

- **BPD** associated with **hyperactive attachment systems** as a result of their **history** and/or **biological predisposition**

- But without **activation** of the attachment system **in therapy** borderline PD patients will never **learn to function** psychologically **in the context of interpersonal relationships**.
Measuring Mentalization (Baron-Cohen et al., 2001) Reading the Mind in the Eyes Test

Friendly - A
Sad - B

Surprised - C
Worried - D
Measuring Mentalization (Baron-Cohen et al., 2001) Reading the Mind in the Eyes Test

Surprised-A

Sure about something-B

Joking-C

Happy-D
Measuring Mentalization (Baron-Cohen et al., 2001) Reading the Mind in the Eyes Test

Joking-A

Flustered-B

Desire-C

Convinced-D
Overall meta-analysis accuracy scores for the Reading in the Mind of the Eyes Test

207, 483–489. doi: 10.1192/bjp.bp.114.152108
Psychic equivalence:
- Mind-world isomorphism; mental reality = outer reality; internal has power of external
- Intolerance of alternative perspectives → concrete understanding
- Reflects domination of self:affect state thinking with limited internal focus

Pretend mode:
- Ideas form no bridge between inner and outer reality; mental world decoupled from external reality
- “dissociation” of thought, hyper-mentalizing or pseudo-mentalizing
- Reflects explicit mentalizing being dominated by implicit, inadequate internal focus, poor belief-desire reasoning and vulnerability to fusion with others

Teleological stance:
- A focus on understanding actions in terms of their physical as opposed to mental constraints
- Cannot accept anything other than a modification in the realm of the physical as a true index of the intentions of the other.
- Extreme exterior focus, momentary loss of controlled mentalizing
- Misuse of mentalization for teleological ends (harming others) becomes possible because of lack of implicit as well as explicit mentalizing
## Modes of non-mentalizing

<table>
<thead>
<tr>
<th>PSYCHIC EQUIVALENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical form</strong></td>
</tr>
<tr>
<td>Certainty/suspension of doubt</td>
</tr>
<tr>
<td>Absolute</td>
</tr>
<tr>
<td>Reality defined by self-experience</td>
</tr>
<tr>
<td>Finality – It just is.</td>
</tr>
<tr>
<td>Internal = external</td>
</tr>
<tr>
<td><strong>Therapist experience</strong></td>
</tr>
<tr>
<td>Puzzled</td>
</tr>
<tr>
<td>Wish to refute</td>
</tr>
<tr>
<td>Statement appears logical but obviously over-generalised</td>
</tr>
<tr>
<td>Not sure what to say, lost in argument</td>
</tr>
<tr>
<td>Angry or fed up and hopeless</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
</tr>
<tr>
<td>Empathic validation with subjective experience</td>
</tr>
<tr>
<td>Curious – how did you reach that conclusion</td>
</tr>
<tr>
<td>Presentation of clinician puzzlement (marked)</td>
</tr>
<tr>
<td>Linked topic (diversion) to trigger mentalizing then return to psychic equivalent area</td>
</tr>
<tr>
<td><strong>Iatrogenic</strong></td>
</tr>
<tr>
<td>Argue with patient</td>
</tr>
<tr>
<td>Excessive focus on content</td>
</tr>
<tr>
<td>Cognitive challenge</td>
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</tbody>
</table>
# Modes of non-mentalizing

<table>
<thead>
<tr>
<th><strong>PRETEND MODE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical form</strong></td>
</tr>
<tr>
<td>Inconsequential talk/groundless inferences on mental states</td>
</tr>
<tr>
<td>Lack of affect. Absence of <strong>pleasure</strong></td>
</tr>
<tr>
<td><strong>Circularity</strong> without conclusion – spinning in sand (hypermentalizing)</td>
</tr>
<tr>
<td>No change</td>
</tr>
<tr>
<td>Dissociation – self harm to avoid meaninglessness</td>
</tr>
<tr>
<td>Body-Mind <strong>decoupled</strong></td>
</tr>
<tr>
<td><strong>Therapist experience</strong></td>
</tr>
<tr>
<td>Boredom</td>
</tr>
<tr>
<td>Detachment</td>
</tr>
<tr>
<td>Patient <strong>agrees</strong> with your concepts and ideas</td>
</tr>
<tr>
<td><strong>Identification</strong> with your model</td>
</tr>
<tr>
<td>Feels <strong>progress is made</strong> in therapy</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
</tr>
<tr>
<td><strong>Probe</strong> extent.</td>
</tr>
<tr>
<td><strong>Counter-intuitive</strong> comment</td>
</tr>
<tr>
<td><strong>Stop and challenge</strong></td>
</tr>
<tr>
<td><strong>Iatrogenic</strong></td>
</tr>
<tr>
<td><strong>Non-recognition</strong></td>
</tr>
<tr>
<td>Joining it with acceptance as real</td>
</tr>
<tr>
<td><strong>Insight orientated/skill acquisition intervention</strong></td>
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</tbody>
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## Modes of non-mentalizing

<table>
<thead>
<tr>
<th>TELEOLOGICAL MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical form</strong></td>
</tr>
<tr>
<td>Expectation of <em>things</em> being ‘<em>done</em>’, must happen <strong>Outcomes</strong> in physical world determine understanding of inner state – ‘I took an overdose; I must have been suicidal. <strong>Motives</strong> of others <em>judged</em> on what actually happens Only <strong>actions</strong> can <em>change</em> mental process ‘What you do and not what you say’</td>
</tr>
<tr>
<td><strong>Therapist experience</strong></td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
</tr>
<tr>
<td><strong>Iatrogenic</strong></td>
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</table>
The MBT technique

- Simple **sound-bite** interventions
- **Affect focused** (love, desire, hurt, catastrophe, excitement)
- Focus on patients **mind** (not on behaviour)
- Relate to **current** event or activity – mental reality (evidence based or in working memory)
- Use of **therapist’s mind** as model – ‘marking’ as making clear in patient’s situation the therapist would feel (disclosure)
- **Identify non-mentalizing** and recover it on the many occasions when apparently lost
Clinical example of intervention

- Focus is on a break in mentalizing – psychic equivalence, pretend, teleological
- Rewind to moment before the break in subjective continuity
- Explore current emotional context in session by identifying the momentary affective state between patient and therapist
- Identify therapist’s contribution to the break in mentalizing (humility)
- Seek to mentalize the experience in the context of the therapeutic relationship
Therapist Stance

- **Using questioning** comments to promote exploration
  - **What do you make** of what has happened?
  - Describe your **experience to me in more detail**. Where in your body did you first feel that?
  - I wonder (beware of wondering too often!) if that **was related to the group** yesterday?
  - Goodness, it sounds very much like **you felt that I was judging you**?
  - **What might have made** do you think that he said that?*
  - What do you **make of her suicidal feeling** (in the group)?*
  - Why do you think that he **behaved towards you as he did**?*

*ONLY IF PATIENT NOT IN PSYCHIC EQUIVALENCE*
Essential to the Stance

- Keep it current – what the patient feels right now
- Find a way of stating that you genuinely understand their distress – GO ALONGSIDE THE PATIENT
- See the experience through their eyes and mind
- Patient
- Authentic
- Curious
- Thoughtful
- Sensitive
Interventions: Spectrum

- Supportive/empathic validation
- Clarification, elaboration, challenge
- Basic mentalizing, Affect Focus
- Relational Mentalizing

Most involved
Least involved
Interventions: Basic Mentalizing

- **Stop, Re-wind, Explore**
  - Lets go back and see what happened just then. At first you/I seemed to understand what was going on but then…
  - Lets try to trace exactly how that came about
  - Hang-on, before we move off lets just re-wind and see if we can understand something in all this.

- **Labeling with qualification (beware) (“I wonder if…” statements)**
  - Explore manifest feeling but identify consequential experience – You say you are anxious with others so I wonder if that leaves you feeling a bit left out?
  - ‘I wonder if you are not sure if it’s OK to show your feelings to other people?’
What could mediate such a bewildering range of outcomes across multiple domains?

Early adversity

Insecure/disorganized attachment?

Mentalizing problems?

Psychopathology
Physical Health
Educational
Relationships
Economic
Occupational
Mentalization based definition of trauma

- 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

INADEQUITE MODULATION BY mPFC

HYPERRESPONSIVENESS IN AMYGDALA TO STRESS

INCREASE IN STRESS

DECREASE IN MENTALIZING ABILITY

RETURN TO PREMENTALIZING MODES OF COGNITIVE FUNCTIONING

ONSLAUGHT OF ALIEN SELF
Trauma

Destructive effect on cognition

TELEOLOGICAL MODE ➔ REENACTMENT

PRETEND MODE ➔ DISSOCIATION

UNMENTALIZED FEELINGS

PSYCHIC EQUIVALENCE

Pretend Mode

Fear

Disbelief

Loneliness

Disgust

Guilt

Anger

Pain
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.)
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 \( t_{83} = 4.93, p < 0.001 \)
- 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
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 challenges 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:

<table>
<thead>
<tr>
<th>Reflective orientation (α=.87)</th>
<th>Affectionate support of agency (α=.85)</th>
<th>Negativity (α=.74)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Interest in</strong> the subjective experience of the child</td>
<td>• <strong>Support of investment/agency</strong> of the child</td>
<td>• <strong>Aggressive control</strong></td>
</tr>
<tr>
<td>• Affective <strong>communication</strong></td>
<td>• <strong>Expression of affection</strong></td>
<td>• <strong>Hostility</strong></td>
</tr>
<tr>
<td>• Capacity to <strong>play</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Measuring parental 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
- Reflective orientation .45***
- Affectionate support of agency .30**
- Negativity -.40**

### Reflective orientation
- Externalising problems \( (r= -.18^*) \)
- Delinquency \( (r= -.14^*) \)
- Aggression \( (r= -.16^*) \)
- Dissociation \( (r= -.14^*) \)
- Teacher reported (TR) internalising \( (r= -.29^*) \)
- TR externalising \( (r=-.36^*) \)
- TR **social problems** \( (r= -.39^{**}) \)
- TR **attention problems** \( (r= -.35^{**}) \)
- TR delinquency \( (r= -.39^{**}) \)
- TR aggression \( (r= -.39^{**}) \)

### Affectionate support of agency
- Internalising \( (r= -.15^*) \)
- **Externalising** \( (r= -.19^*) \)
- Attention problems \( (r= -.16^*) \)
- Delinquency \( (r= -.17^*) \)
- Aggression \( (r= -.19^*) \)
- Dissociation \( (r= -.19^*) \)

### Negativity
- Externalising \( (r= .15^*) \)
- TR delinquency \( (r= .23^*) \)

* \( p<.05 \)
** \( p<.01 \)
* \( p<.08 \)

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.
From attachment to communication: via socio-biology
Criticisms of attachment theory

From psychoanalysis: “mechanistic”
“reductionistic”
“no real metapsychology”
“broad classifications that lose the subtlety and detail of the original material”

From anthropology: “culturally blind”
“socially oblivious”
“misses different family configurations, e.g., alloparenting”
“empirically based on WEIRD people”

WEIRD: Western, Educated, Industrialised, Rich & Democratic

Fonagy & Target, 2007; Röttger-Rössler, 2014; Otto, 2011)
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
Sensitivity is biologically a group phenomenon

- Use of the sensitivity **construct restricted to single-caregiver** observations (predominantly mother–infant interactions)
- **Non-Western** communities have simultaneous **multiple caregiving without** clear **place-bound** or **time-bound task division** (Hrdy, 1992)
- Need to **assess** the **caregiver network’s sensitive responsiveness** to the infant **when simultaneous multiple caregiving** is the norm (Mesman et al., 2016)
  - **Being responded to sensitively** most of the time by many people **fosters trust in** the availability of the **entire network** to a system rather than an individual
‘The universal socialization task for cultures regarding attachment concerns the learning of trust, not ensuring the “secure” attachment of an individual child to a single caregiver in a dyadic relationship. The question that is important for many, if not most, parents and communities is not, “Is [this individual] child ‘securely attached?’”, but rather, “How can I ensure that my child knows whom to trust and how to share appropriate social connections to others? How can I be sure my child is with others and situations where he or she will be safe.”

Thomas S. Weisner, 2014
A historical overview of shifting frames

■ Changing one’s favourite instinct:

- Up to age 40: The *psychosexual* AND *aggression* instinct – Freud and classical psychoanalysis

- Age 40-60: The instinct for *attachment* – Bowlby, Ainsworth and early infant researchers
  - Attachment theory extended to mentalizing can encompass:
    - Sexuality – failure of early *mirroring*
    - Aggression – failure of *affect regulation* and impact awareness

- Age 60 to †: The instinct for *communication* – Tomasello, Gergely, and modern developmental research
  - Communication defines attachment relationships
    - Secure attachment ensures capacity to *learn from experience*
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.
How do young humans learn to use the bewildering array of tools that surround them efficiently?
Five distinctive features of a CULTURE
(Whitehead & Rendell “The Cultural Lives of Whales and Dolphins”)

- A characteristic **technology** that engenders
- A **moral component**, with rules that buttress “the way we do things” and punishments for infraction that creates
- An acquired, not innate, distinction between **insiders** and **outsiders** that permits
- A **cumulative character** that builds up over time that necessitates
- **Teaching** and learning that requires
- **Epistemic vigilance**
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!
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- The pedagogic stance is triggered by **ostensive** communicative cues (E.G. turn-taking contingent reactivity, eye contact)
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- 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
  - 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 ➔ cognitive advantage of security ➔ 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
How epistemic trust is generated

- We all have a **personal narrative**
- The **understanding** of that narrative by another person creates a **potential** for epistemic **trust**
- The **perception of the understanding** by the other of the personal narrative generates epistemic trust
- As it is a **perception** genuine understanding may not be necessary and the **illusion of understanding** may suffice.
Effec5ve%Ostensive%Cue:%Recognizing%Agency %

The learner

1. The learner’s imagined self narrative

2. The informer’s image of the learner’s self narrative

3. The learner’s image of the informer’s image of the learner’s self narrative

4. The epistemic match

5. Opening of epistemic channel for knowledge transfer

The informer

The learner
Individuals differ in the extent they are able to generate epistemic trust.
Individual Differences in Creating Epistemic Trust

• **Influential** communicators
  – use ostensive **cues** to **maximum**
  – create ‘**illusion’** of **recognizing** agentiveness of listener
    • **Looking** at audience
    • Addressing current **concern**
    • Communicating that they see problem from **agent’s perspective**
    • Seeing and recognizing individual **struggle in understanding**

• Massive **difference in ability** of individuals to influence (teachers, politicians, managers, therapist) explicable in terms of varying capacity to **generate epistemic trust**
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.
- Builds a story about the **power of teachers** and of **feedback**, and constructs a model of **learning and understanding**.
- 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

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

With grateful thanks to Dr Peter Fuggle
Therapist is greatest source of variance in psychotherapy outcome (Wampold et al. 2016)
Teleological mode:

- Inner mental states are recognized, but are restricted to the physical world.
- Patients cannot accept anything other than a modification in the realm of the physical as a true index of the intentions of the other.
- Overvaluing of physical appearance ➔ anorectic and bulimic symptoms.
- Physical reality of bodily modification (self-harm).
Mentalization model of disordered eating
(Fonagy, 2002)

Excessive demand for excellence

Becoming a woman

Rejection

Current ‘insurmountable’ life challenges

Over activation of attachment system

Disruption of mentalization

Stress reaction (fight/flight)

CSA

History of physical maltreatment

Adverse parenting

Genetic & early environmental influence

The disorganised self

Psychic equivalence

Pretend mode

Teleological thinking

Distorted cognitions, dysregulated affect, disorganised self structure

DISORDERED EATING
Can we **think** about EDs without **blaming**.

- The patient
- The family
- The culture
- The illness/genes
Can we **think** about EDs without **blaming**.
A more nuanced view of the way the concept of mentalizing can be helpful in treatment of ED
Conceptualizing the complexity of EDs

- Culture/society
- Attachment relationships
- Biological/genetic factors

CYP with ED
Conceptualizing the complexity of EDs

What is an eating disorder?

- Culture/society
- Biological/genetic factors
- Attachment relationships
What is an eating disorder?

ED symptoms are attempted solutions to underlying problems of social (self) regulation.
Neural Processing of Social Attribution in AN (ToM)

What are the neural correlates relating to thinking about social relationships in recovered AN?

- 17 Recovered AN (RAN, aged 24.7 years)
- 17 HC

Recovered anorectic patients show reduced activation in the social cognition network, as measured by fMRI.

Largest reductions were found in:
- Temporoparietal junction
- Inferior frontal gyrus
- Fusiform gyrus
- Prefrontal cortex
- Temporal poles
- Middle temporal gyrus
- Precuneus
- Anterior cingulate cortex

The Mentalizing Network

McAdams & Krawczyk, 2011
The social brain in Anorexia, Bulimia and controls

Social Attribution Task

17 BN, 18 AN in process of recovery & 18 HC. Aged 28.1, 26.1, and 24.5 years respectively

Subjected to fMRI Tasks that imply thinking about self-knowledge and social interactions

Hypoactivation of right temporoparietal junction

Physical vs Social Causation

Least activation of TPJ associated with social causation in AN < BN < CN

McAdams & Krawczyk, 2013