Relationship influences on child psychological development
Lynne Murray and Peter Cooper
University of Reading, UK;
and Stellenbosch University, South. Africa
Social relationships are at the heart of child psychological development

- Empathy and social understanding
- Cognitive development
- Behavioural-emotional control
- Attachment and mental health
Relationships and development

- ‘Specificity’ - different aspects of relationships are associated with different kinds of child functioning
- Relationship patterns start to develop early in infancy
- Effects of early experience can endure
- There may be ‘sensitive periods’ in development - e.g., animal models (Meaney, institutionalized children (Zeanah; Rutter)
1. Empathy and social understanding

Different kinds of social relatedness through the first two years

- Core: two-to-four months
- Topic based: four-to-nine months
- Connected: nine-to-15/18 months
- Cooperative: from 15-18 months
Core relatedness: The Infant Social Brain

• Infants are geared from the start to connect:- they prefer
  – Faces- especially those making eye contact
  – Voices-especially ‘baby talk’

• They quickly prefer their carers’ features
  – Mother’s face
  – Mother’s voice
  – Mother’s smell
Core relatedness: Intuitive Parenting

- Specific brain responses to ‘baby’ faces (Kringlebach et al., 2008)
- Even stronger with own infant (Swain, 2008)
- Eye contact with an infant precipitates stereotyped greeting response (Papousek, 1997)
Changes in relationship between infant attention and expressiveness in face-to-face communication: the 2-month transition (Lavelli & Fogel, 2005, Dev Psych)

*Figure 1.* Mean duration of the infant’s expressive configurations co-occurring with Gaze at the Mother’s Face during mother–infant face-to-face communication over the first 14 weeks of life.
Core relatedness in Proto-conversations

• **By six-eight weeks, infants**-
  – Hold eye contact
  – Vocalise
  – Smile
  – Show ‘pre-speech’

• **Parents**
  – Imitate, or ‘mirror’
  – Mark the infant’s ‘utterances’
The ‘Mirror Neuron System’

- First identified in non-human primates (Rizzolati and Parma group)
- *Observation* of another’s action produces similar brain responses to those involved in *performing* the action.

- Similarly

- Own action creates ‘readiness’ to observe the equivalent in what the other does

- Basis for empathy, feelings of ‘like me’
Adaptive role of parental mirroring

- Feeling of connectedness
- Direct imitation - increases infant emotional involvement and expression of mirrored actions
- ‘Sculpting’ – via e.g. enriched mirroring/marking - conveys meaning
- Regulation of negative affect via emotional contouring
Importance of responsiveness evident from perturbation studies

The Face-to-Face Still Face Procedure
(Mesman et al., 2009 meta analysis)
Peak in face-to-face contact 10 weeks

(Lavelli and Fogel, Dev Psych., 2002)
Shift to Topic-based relatedness from three-to-four months

• Infant vision and grasping improve after 12 weeks

• Decline in eye contact

• To engage the infant and share experience, parents adjust via body games, object play and showing- ‘ostensive marking’
‘Ostensive marking’ affects object understanding

When eye contact and smiles occur first, infants show better attention to objects, and remember them better.

So- experience of the world is coloured by social contacts
Shift to from Topic-based to Connected relatedness from nine months

Marking, showing, and sharing objects, and triadic play, all predict better social understanding-connected relatedness-at nine months (e.g., Gaffan et al., 2010)
Shift to cooperative relatedness and understanding of others - 15-18 months
Empathy and prosocial behaviour

• Develop in context of particular kinds of play and engagement where the parent can support
  – close connectedness- e.g., ‘mirroring’
  – the infant’s awareness of joint experience of a topic, e.g., body games, presenting the world to the infant
  – the infant’s awareness of different experiences, e.g., cooperative projects, teasing, talking about feelings and reasons for behaviour
Fostering empathy and prosocial behaviours in infancy may promote adaptive relationships in later childhood and adolescence.
2. How do mother-child interactions affect cognitive development?

- Lack of contingency & learning (Tronick & Weinberg, 1997; Stanley et al., 2004)
Infant behaviour in live, replay and live conditions of double video

Gaze to Mother

Murray & Trevarthen, 1985
Infant behaviour in live, replay and live conditions of double video

Smiling

Murray & Trevarthen, 1985
How do mother-child interactions affect cognitive development?

- Adjusting stimulation to sustain attention *(Kaplan et al, 1999)*,
- ‘Scaffolding’ *(Vygotsky; Bruner)*
Effects of early relationships can be seen when things go wrong:

Postnatal Depression
Postnatal depression

- Occurs in 13% mothers UK, US samples; higher in adversity

- Symptoms: low mood, loss of interest, fatigue, guilt, low self-worth

- Generally lasts through the first six months postpartum
Cambridge Prospective longitudinal study, birth-22yrs

General population sample, screened at 6 weeks
All index cases, plus random controls: N = 100

Key assessments
-Mother-infant/child interactions- face-to-face, including vocal
-Child psychopathology
Interaction difficulties in Postnatal Depression

General insensitivity, two broad patterns:

- remote and disengaged,
- hostile and intrusive;

-problems may occur especially with boys, and when the depression is severe and chronic
Maternal interactions at 2 months, & Bayley Mental Index at 18 months

(Murray et al., 1993)
Effect of PND on boys’ GCSEs in Cambridge study (Murray et al., JCPP, 2010)
GCSE points in Cambridge study (boys of PND mothers score one grade lower in each of seven subjects)  
(Murray et al., JCPP, 2010)
How do mother-child interactions affect child behaviour-emotion regulation?

### Unhelpful practices

<table>
<thead>
<tr>
<th>Poor reparation of breakdown &amp; support for self regulation</th>
<th>Tronick &amp; Gianino, 1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostility &amp; coercion (especially inconsistent)</td>
<td>Murray et al, 1996</td>
</tr>
<tr>
<td></td>
<td>Morrell &amp; Murray, 2002</td>
</tr>
<tr>
<td></td>
<td>Maughan et al., 2007</td>
</tr>
</tbody>
</table>

### Helpful practices

<table>
<thead>
<tr>
<th>Containment, Warmth, Distraction, Pre-emption, Reasoning</th>
<th>Patterson; Gardner</th>
</tr>
</thead>
</table>
Infant and parenting predictors of conduct disorder

(EBD= emotion/behaviour dysregulation)

Morrell & Murray, JCCP, 2003
3. How do mother-child interactions affect child attachment security and mental health?

- Security is promoted by parental availability - the parent is there for the child
- responsiveness - the parent will respond
- sensitivity - the parent’s response is appropriate
- ‘reflective functioning’ - the parent understands the child

In relation to infant needs, and particularly needs around vulnerability and distress
Attachment

• Child attachment security basis for later resilience, and well functioning close, intimate, relationships

• In infancy seen in:
  – Separation anxiety
  – Stranger Fear
  – Ainsworth’s Strange Situation Procedure
Bowlby’s view of mental health implications of attachment for ego resiliency

• Avoidant Insecure pattern
  – Deny needs
  – Attempt to live without others’ love and support
  – Sense of self as not worthy of love
  – Low expectations of others

• Ambivalent Insecure pattern
  – Pervasive anxiety, especially re. separation/abandonment
  – Limited exploration of world
  – Coping capacities not developed
Thus, the insecure child may:-
lack capacity to cope with threat
have rigid, or limited coping strategies
be overwhelmed with sense of loss/anxiety
have low self-worth
(Erikson, 1985)
Cambridge study: Lifetime diagnoses by 16-yrs
(Murray et al, JAACAP, 2011)

Any Diagnosis

Depression

Anxiety

Behavioural

** OR=3.16

** OR=4.96

* OR=2.83

Control (n=40)
PND (n=53)
Pathway
*(Murray et al., JACAAP, 2011)*

PND disturbances in care $\rightarrow$ insecurity $\rightarrow$ low resilience $\rightarrow$ adolescent depression
Conclusion

- Different kinds of responsiveness support different aspects of child development
- There is specificity of effects
- Early interventions at the level of relationships stand to promote good child development