

Lecture 8: Social and Emotional Development



Lecture Overview

- * **The nature of attachment**
- * **Development of attachment**
- * **Theories of attachment**
- * **Individual differences in attachment**
- * **Disrupted attachments**
- * **Long-term correlates of attachment security**

What is Attachment?

- * In developmental psychology, the term *attachment* refers to the emotional ties between children and their closest associates.
- * According to Ainsworth and Bell (1970), an attachment is “*an affectional tie that one person or animal forms between himself and another specific one - a tie that binds them together in space and endures over time*” (p.50).
- * It is a bi-directional relationship

What is an Attachment Behaviour?

An attachment behaviour is

“any form of behaviour that results in a person attaining or maintaining proximity to some other clearly identified individual who is conceived as better able to cope with the world. It is most obvious whenever the person is frightened, fatigued, or sick, and is assuaged by comfort and caregiving” (Bowlby, 1985 p.27).

Very early bonding: the work of Klaus and Kennell (1976)

- * 28 economically disadvantaged mothers who had just delivered full-term healthy infants were studied during their 3 day stay in hospital.
- * 14 were allocated to a “routine” condition; the other 14 were allocated to an “extended contact” condition

Klaus and Kennell's findings

- * Follow up was conducted at 1 month and at 1 year.
- * There appeared to be some differences favouring the “extended contact” group (e.g. they displayed more soothing and nurturing behaviour).

Early contact: Is it necessary for optimal development?

- * Existence of a “sensitive period” is now thought to be very questionable (Goldberg, 1983; Myers, 1984; Rutter, 1981).

Development of the caregiver's attachment to the infant

Why does it occur?

- Bowlby (1958,1969) argued that infants are endowed with basic reflexes (e.g. smiling, babbling, interactional synchrony) which enable them to communicate their needs and which ensure the proximity of caregivers.
- He also argued that infants have physical characteristics that adults are predisposed to find attractive (the kewpie doll effect).



Disruptions in the development of the caregiver's attachment to the infant

- * **Infant characteristics (e.g. irritability, lack of alertness, lack of attention to social stimuli);**
- * **Negative caregiver emotions**
- * **Unfavourable environmental circumstances**

Development of the infant's attachment of the caregiver

How soon does it occur?

1. The phase of indiscriminate sociability (0-8 weeks)
2. The phase of indiscriminate attachments (8 weeks – 6/7 months)
3. The phase of specific attachments (from approx. 7 months)
 - Stranger anxiety
 - Separation anxiety
4. The phase of multiple attachments (from approx. 18 months)

The phase of indiscriminate sociability (or asocial phase)

- * The infant responds in an equally favourable way to many kinds of social and non-social stimuli**

The phase of indiscriminate attachments

- * The infant prefers social to non-social stimuli and is likely to protest whenever any adult puts them down or leaves them alone. Tends to be rather indiscriminate.

The phase of specific attachments

- * The phase when the infant is attached to one close companion (usually the mother). Both stranger anxiety and separation anxiety appear during this phase.



Stranger Anxiety

- * Exhibited by many infants between 6 and 9 months of age and often continues throughout the first year.
- * Affected by the infant's temperament, the availability of familiar companions, the familiarity of the setting, the stranger's behaviour, the caregiver's reaction, and how accustomed the infant is to meeting strangers (Dickstein and Parke, 1988; Mangelsdorf et al. ,1995).

Separation Anxiety

- * Generally exhibited between 9 and 12 months
- * Involves displays of fear, clinging, crying etc.
- * Affected by the infant's knowledge about where the mother is, and the infant's familiarity with where the mother goes.

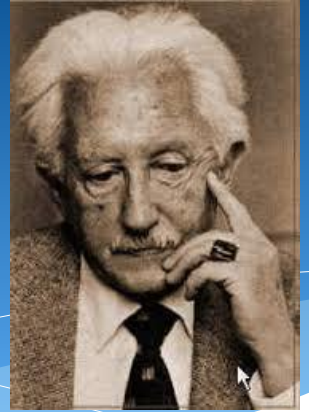
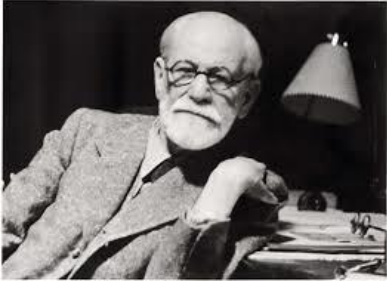
The phase of multiple attachments

- * The phase when infants form attachments to several other people (e.g. fathers, siblings, grandparents etc.).

Theories of Attachment

- * **Psychoanalytic theory**
- * **Learning theory**
- * **Cognitive/Developmental theory**
- * **Ethological theory**

Psychoanalytic Theory



- * **Attachments develop from oral activities. According to Freud, young infants are centred on oral experiences; the natural provider of these activities is the mother.**
- * **According to Erikson, the first year is concerned with establishing basic trust, and again the mother is attributed a key role in this achievement**

Learning Theory

- * Feeding is thought to be important for 2 reasons (Sears,1963): (1) it should elicit positive responses from a contented infant which in turn are likely to increase the mother's affection for the infant; (2) feeding is often an occasion when mothers can provide infants with many comforts.**
- * Over time, the mother becomes associated with pleasant or pleasurable sensations such that she soon becomes a valuable commodity.**

Just how important is feeding?



- * Harlow and Zimmerman's (1959) study compared the importance of feeding and tactile stimulation for the development of attachment in infant monkeys.
- * The findings implied that contact comfort is a more powerful contributor to attachment in monkeys than feeding.

Cognitive/Developmental Theory

- * The ability to form attachments depends, in part, on the infant's level of intellectual development.
- * Attachment depends on the development of object permanence (Lester et al. 1974).

Ethological Theory

Origins of the ethological viewpoint

- * Ethological theory of attachment prompted by research with animals (Lorenz, 1937).

Attachment in humans

- * Attachment is an innate response that increases the infant's chance of survival

Attachment Theory

- * Developed by a number of theorists (most notably Bowlby), to explain the nature of parent-infant bonding.
- * Objects of attachment – termed transitional objects (Winnicott, 1953)
- * A core concept is that of ‘internal working model’ (IWM)
- * The IWM of a person includes a representation of self, other, and of the relation between the two
- * IWMs (which continue onwards into childhood and beyond) serve to organize behaviour towards others

- * *“No variables, it is held, have more far-reaching effects on personality development than have a child’s experiences within his family: for, starting during his first months in his relations with his mother figure, and extending through the years of childhood and adolescence in his relations with both parents, he builds up working models of how attachment figures are likely to behave towards him in any of a variety of situations; and on those models are based all his expectations, and therefore all his plans, for the rest of his life” (Bowlby, 1973, p.369)*

‘Good-enough mother’

- * A term coined by Winnicott to describe a mother who allows a sufficient amount of delay in meeting an infant’s needs (thus encouraging tolerance and confidence)
- * Winnicott (1965) believed that this leads to a healthy development of independence and sense of self
- * He did not believe that it was the best way to alleviate an infant’s distress/discomfort/frustration etc. immediately

The work of the Robertsons

- * This brought to the fore the distress that children experienced when their parents left them in hospital or parents were themselves hospitalized (Robertson & Robertson, 1989)

- * 'separation anxiety'



Attachment Classification

- * The most widely used procedure for measuring the quality of attachment that 1-2 year olds have established with their mothers or other caregivers is Mary Ainsworth's Strange Situation procedure (Ainsworth et al. 1978).

The Nature and Emergence of Emotion

According to Darwin (1872);

- **There is a direct association between certain inner emotional states and their facial expressions;**
- **These associations are unlearned and found even in babies;**
- **Human emotional expressions are based on a limited number set of basic emotions that are mostly innate to the species and therefore, universal.**

Episodes in Ainsworth's Strange Situation Procedure

1. **Experimenter introduces parent and infant to playroom and leaves.**
2. **Parent sits while infant plays.**
3. **Stranger enters, sits, talks to parent, and tries to interact with the child.**
4. **Parent leaves, stranger offers comfort if the infant is upset.**
5. **Parent returns, greets infant and offers comfort if baby is upset. Stranger leaves.**
6. **Parent leaves room**
7. **Stranger enters and offers comfort**
8. **Parent returns, greets infant, offers comfort if necessary, and tries to interest baby in toys.**

Ainsworth's 4 attachment categories

- * **Secure attachment (Type B)**
- * **Insecure/Resistant attachment (Type A)**
- * **Insecure/Avoidant attachment (Type C)**
- * **Disorganized/disoriented attachment (Type D)**

The effects of disrupted attachments

Early studies of institutionalized children

e.g. Bowlby (1944,1953)

Goldfarb (1943, 1947)

Spitz (1945,1946,1949)

Harlow's studies of socially deprived monkeys

- * Infant rhesus monkeys were separated from their mothers and raised in isolation.
- * the isolated monkeys were well fed and healthy, but had no contact with other monkeys.

Harlow's studies of socially deprived monkeys

Findings

- * when the infant monkeys were placed with other monkeys 6 months later, they showed complete social maladjustment.
- * As adults, these monkeys were unable to mate satisfactorily

Modern studies of long-term correlates of secure and insecure attachments

- * Infants who establish secure primary attachments are likely to display more favourable developmental outcomes.**

e.g. Elicker, Egeland and Sroufe (1992)

Frankel and Bates (1990)

Jacobson and Wille (1986)

Lyons-Ruth, Easterbrooks and Cibelli (1994)

Waters (1978)

Why do such long-term effects occur?

- * Erikson argued that securely attached infants establish a sense of basic trust
- * From the ethological perspective, Bowlby argued that early attachment relationships influence the development of internal working models

Explanation of the effects

The effects on institutionalized children have been explained by :

- 1. The maternal deprivation hypothesis;**
- 2. The social stimulation hypothesis**

Lecture Overview

- * The effects of disrupted attachments appear to be associated with greater incidences of social, cognitive and linguistic problems.
- * Evidence points to the need for secure attachment in infancy in order to pave the way for healthy, psychological development.

References

- * Ainsworth, M.D.S.(1979). Attachment as related to mother-infant interaction. In J.S. Rosenblatt, R.A. Hinde, C.Beer, & m.Busnel (Eds.), *Advances in the study of behaviour* (Vol. 9). Orlando, FL: Academic Press.
- * Ainsworth, M.D.S. & Bell, S.M. (1970). Attachment, exploration and separation: illustrated by the behaviour of one year olds in a strange situation. *Child Development*, 41, 49-67.

References

- * Ainsworth, M.D.S., Blehar, M.C., Waters., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- * Bowlby, J. Forty-four juvenile thieves: their characters and home life. *International Journal of Psycho-Analysis*, 21, 154-178.

References

- * Bowlby, J. (1953). *Child Care and the Growth of Love*. Harmondsworth: Penguin.
- * Bowlby, J. (1969). *Attachment and Loss: Vol.1. Attachment*. New York: Basic Books.
- * Dickstein, S., & Parke, R.D. (1988). Social referencing in infancy: a glance at fathers and marriage. *Child Development*, 59, 506-511.

References

- * Elicker, J., Englund, M., & Sroufe, L.A. (1992). Predicting peer competence and peer relationships in childhood from early parent-child relationships. In R.D. Parke & G.W. Ladd (Eds.), *Family-peer relationships: Modes of linkage* (pp 77-106). Hillsdale, NJ: Erlbaum.
- * Frankel, K.A., & Bates, J.E. (1990). Mother-toddler problem-solving: Antecedents in attachment, home behaviour and temperament. *Child Development*, 61, 810-819.

References

- * Goldberg, S. (1983). Parent-infant bonding: Another look. *Child Development*, 54, 1355-1382.
- * Goldfarb, W. (1943). The effects of early institutional care on adolescent personality. *Journal of Experimental Education*, 12, 107-129.

References

- * Goldfarb, W. (1947). Variations in adolescent adjustment in institutionally reared children. *Journal of Orthopsychiatry*, 17, 449-457.
- * Harlow, H.F., & Harlow, M.K. (1977). The young monkeys. In *Readings in Developmental Psychology Today* (2nd ed.). Del Mar, CA:CRM Books.

References

- * Harlow, H.F., & Zimmerman, R.R. (1959). Affectional responses in the infant monkey. *Science*, 130, 421-432.
- * Jacobson, J.L., & Wille, D.E. (1986). The influence of attachment pattern on developmental changes in peer interaction from the toddler to the preschool period. *Child Development*, 57, 338-347.

References

- * Klaus, M.H., & Kennell, J.H. (1976). *Maternal-infant bonding*. St. Louis: Mosby.
- * Lester, B.M., Kotelchuck, m., Spelke, E., Sellers, M.J., & Klein, R.E. (1974). Separation protest in Guatemalan infants: Cross-cultural and cognitive findings. *Developmental Psychology*, 10, 79-85.

References

- * Lorenz, K.Z. (1937). The companion in the bird's world. *Auk*, 54, 245-273.
- * Lyons-Ruth, K., Easterbrooks, M.A., & Cibelli, C.D. (1997). Infant attachment strategies, infant maternal lag, and maternal depressive symptoms: Predictors of internalizing and externalizing problems at age 7. *Developmental Psychology*, 33, 681-692.

References

- * Mangelsdorf, S.C., Shapiro, J.R., & Marzolf, D. (1995). Developmental and temperamental differences in emotion regulation in infancy. *Child Development*, 66, 1817-1828.
- * Myers, B.J. (1984). Mother-infant bonding: the status of this critical-period hypothesis. *Developmental Review*, 4, 240-274.

References

- * Robertson, J., & Robertson, J. (1989). *Separation and the very young*. London: Free Association Press.
- * Rutter, M. (1981). *Maternal Deprivation Reassessed*, 2nd Ed. Harmondsworth: Penguin.
- * Schaffer, H.R., & Emerson, P.E. (1964). The development of social attachments in infancy. *Monographs of the Society for Research in Child Development*, 29, (3, serial No.94).

References

- * Sears, R.R. (1963). Dependency motivation. In M.Jones (Ed.), *Nebraska Symposium on Motivation* (Vol.11). Lincoln: University of Nebraska Press.
- * Spitz, R.A. (1945).Hospitalism:An inquiry into the genesis of psychiatric conditions in early childhood. In A. Freud (Ed.), *The psychoanalytic study of the child* (Vol. 1). New York: International Universities Press.
- * Spitz, R.A. (1946). Hospitalism, a follow-up report. *The Psychoanalytic Study of the Child*, 2, 113-117.

References

- * Spitz, R.A. (1949). Motherless infants. *Child Development*, 20, 145-155.
- * Waters, E. (1978). The reliability and stability of individual differences in infant-mother attachment. *Child Development*, 49, 483-494.
- * Winnicott, D.W. (1953). Transitional objects and transitional phenomena. *International Journal of Psychoanalysis*, 34, 89-97.

Part two:

The Emergence of Emotion in Infancy

- * **Contemporary research also suggests that new-born babies can perform certain facial expressions that are usually regarded as species specific and universal.**



Happiness

- * First expressed in smiles, and later through laughter.
- * The *social smile* usually appears between 6 and 10 weeks
- * By 3 months, infants smile most often when interacting with familiar people
- * Laughter appears at around 3-4 months at the same time as curiosity
- * Infants' smiles and laughter strengthen the parent-child bond

Anger and Sadness

- * New-born babies respond with distress to a variety of unpleasant experiences (e.g. hunger, painful medical procedures, too much/little stimulation).
- * Comes from maturing cortex (Konner 2007)
- * Angry reactions increase with age, a natural response
- * Expressions of sadness also occur in response to e.g. pain, removal of an object, brief separation (but are less frequent than anger) this is associated with increased cortisol in the brain which in turn shapes it

Fear

- * Fear begins to rise during the second half of the first year.
- * The most frequent expression of fear is to unfamiliar adults – *stranger anxiety*.
- * Cross-cultural research reveals that the extent of *stranger anxiety* differs with different infant-rearing practices.
- * As *stranger anxiety* develops, babies use the familiar caregiver as a *secure base* from which to explore.
- * *Stranger anxiety* and other fears decline as cognitive development proceeds.
- * Also remember *separation anxiety*

Facial Expressions of Emotion During Infancy

- * 10-12 month old infants show evidence of happiness, surprise and fear (Hiatt, Campos and Emde, 1979).
- * Fear, self awareness and anger comes from the development of the anterior cingulate gyrus (Posner 2007)
- * Stress impairs the brain, particularly the emotional areas. For example, the hypothalamus grows slowly if infants experience prolonged stress.

Facial Expressions of Emotion During Infancy



- * Infants aged 2,4,8,and 19 months are found to show reactions of distress and anger (Izard, Hembree, Dougherty and Spizzirri, 1983).
- * Usually have full compliment of emotions by 18months old

Facial Expressions of Emotion During Infancy

- * Infants who are only 2 hours old show differential facial responses to sweet, sour and bitter tastes (Rosenstein and Oster, 1988).



Infants' Recognition of Emotional Expression

- * 10 week old babies behave differently depending on the emotion being presented to them (Haviland & Lelwica, 1987).

Understanding and Responding to the Emotions of Others

Social Referencing in Infancy

- * Social referencing refers to the tendency to look to social partners for guidance about how to respond to unfamiliar or threatening events.
- * Two well studied examples are: (1) reactions to strangers or strange toys (Feiring, Lewis & Starr, 1984; Klinnert, 1984; Klinnert et al. 1986); (2) behaviour on the 'visual cliff' (Sorce et al. 1985).

The 'visual cliff' experiment

The visual cliff



Self-conscious emotions

- * Self-conscious emotions (e.g. shame, embarrassment, guilt, envy, pride) involve injury to, or enhancement of, our sense of self.
- * Self-conscious emotions appear at the end of the second year.
- * Self-conscious emotions require adult instruction in when to feel proud, ashamed or guilty.
- * Children become increasingly sensitive to praise or blame.

Understanding of Social Emotions

- * Children's understanding of the kinds of situations that typically evoke different emotions in others rapidly develops over the preschool period (Bretherton & Beeghly, 1982; Michalson & Lewis, 1985).
- * Children's ability to understand the circumstances that evoke complex social emotions emerges after age 7 (Harris et al. 1987).

Understanding of Social Emotions

- * With age, children also come to understand that people can feel emotions based on reminders of past events (Lagattuta, Wellman & Flavell, 1997).



Experiencing Mixed Emotions

- * Children only gradually learn that it is possible to experience mixed emotions (Harter, 1998,1999; Harter & Buddin, 1987).**

Emotional Self-Regulation

- * Infants have only a limited capacity to regulate their emotional states.
- * By age 2, gains in language and representation lead to new ways of emotional self-regulation.
- * Rapid gains in emotional self-regulation occur after entry into school.

Emotional Display Rules

- * Emotional display rules are unwritten rules that encourage the expression of certain emotions and the suppression of others (e.g. Saarni, 1984; Cole, 1986).

Gender Differences in the Expression of Emotion

- * Girls more emotional than boys**
- * By the toddler/preschool years boys tend to display more anger than girls**
- * Girls exhibit more fear, distress and embarrassment than boys**

How do we explain such gender differences?

- * **Biological differences**
- * **Socialization differences**

Overview

- * Infants' displays of emotions serve a communicative function that affect the behaviour of parents/caregivers.
- * Emotions undergo changes in the early months and years of life.
- * Children's understanding and self-regulation of emotion improve as a function of age.
- * Girls and boys differ in their expression of emotion, thought to be due to socialization in the family and culture.

Temperament

** “Temperament refers to an individual’s consistent pattern or style of reacting to a broad range of environmental events and situations”.*

(Seifert, Hoffnung & Hoffnung, 2000, p.160).

Is temperament stable over time

- * Strong consistency exists with parental reports
- * Gender differences do exist too, but not as much as we believe:
- * Girls are more sociable
- * Boys more emotionally intense and less fearful
- * But study by Condry & Condry (1976) pp told child was boy or girl, which affected interpretation of behaviour as fearful or angry.

Thomas and Chess'(1977) model of temperament

- * Thomas and Chess (1977) identified 9 main dimensions of temperament:
 1. **Activity level**
 2. **Rhythmicity/regularity**
 3. **Approach/withdrawal**
 4. **Adaptability**
 5. **Intensity of reaction**
 6. **Threshold of responsiveness/alertness**
 7. **Quality of mood**
 8. **Distractibility**
 9. **Attention span**

The Structure of Temperament

* On the basis of these 9 dimensions, Thomas and Chess distinguished 3 distinct types of temperament:

1. The easy child (40%)
2. The difficult child(10%)
3. The slow-to-warm-up child (15%)
4. The hard to classify (35%) later added.

However...

- * Buss, Plomin (1989,1986,1984) argue for a different dimension based on:
- * Activity level, emotionality, sociability.
- * Whereas others look at `traits` and their levels.

Stability of Temperament

- * Many studies show that temperament tends to be fairly stable over time and predicts general later development in such areas as behavioural problems, anxiety disorders, and social competence (e.g. Kagan, 1997; Kagan, Snidman & Arcus, 1998; Caspi et al. 1995; 2003).
- * However, experience can modify biologically based temperamental traits.

- * Goldsmith et al (1995) twin studies suggest that temperament is heritable, and neurological evidence from Kagan (1994) supports this:
- * The differences in temperament, e.g. shyness comes from different thresholds of arousal in brain activity in regions responding to uncertainty, such as the amygdala and hypothalamus.
- * Therefore we do not inherit shyness, rather a `brain reaction`.
- * There is much support for this.
- * Frontal lobe asymmetry: in shy people the two hemispheres respond differently with more activity in the right hemisphere than the left. (Fox 2001)

Kagan

- * Famous for temperament studies, and found that one in five children are inhibited as shown by the following pattern;
 - * 4 months- fretful behaviour and crying
 - * 9 months- cannot ignore distracting stimuli
 - * Childhood presence of fear
-
- * Using scans, young adults have more activity in the brain regions responsible for coding negative emotions of strange faces.

How do we know that temperament is stable?

- * Hepatitis B injections were given to new born's and their cry variations were matched with later temperament patterns.
- * Temperament may overlap with personality but whilst temperament is genetic, some aspects of personality are learned, such as honesty and humility, but what these studies tell us is that...
- * Experience is the way in which we express the biological traits.

Genetic and Environmental Influences

- * The word *temperament* implies a genetic basis for individual differences in personality
- * Environmental influences however, are also powerful and cannot be ignored.
- * Scarr & McCartney (1983) niche picking... our choices reflect our temperament which in turn alter our behaviour.

The role of temperament in children's social skills and adjustment

- * The degree to which an infant's early temperament contributes to personality development is likely to be influenced by *goodness of fit* between his/her temperament and the attitudes, expectations and responses of parents and other caregivers.

Overview

Temperament:

- Refers to individual differences in emotional and behavioural responding to environmental events;
- Is believed to have a biological basis but is also affected by experiences in the environment, including social interactions;
- Tends to be somewhat stable over time;
- Plays an important role in adjustment.

References

- * Bretherton, I., & Beeghly, M. (1982). Talking about internal states: The acquisition of an explicit theory of mind. *Developmental Psychology*, 18, 906-921.
- * Caspi, A., Henry, B., McGee, R.O., Moffitt, T.E., & Silva, P.A. (1995). Temperamental origins of child and adolescent behaviour problems: From age three to age fifteen. *Child Development*, 66, 486-498.

References

- * Caspi, A., Harrington, H., Milne, B., Amell, J.W., Theodore, R.F., & Moffitt, T.E. (2003). Children's behavioral styles at age 3 are linked to their adult personality traits at age 26. *Journal of Personality*, 71, 495-513.
- * Chess, S., & Thomas, R. (1984). *Origins and evolution of behaviour disorders*. New York: Brunner/Mazel.

References

- * Cole, P.M. (1986). Children's spontaneous control of facial expression. *Child Development*, 57, 1309-1321.
- * Darwin, C. (1965). *The Expression of the Emotions in Man and Animals*. Chicago: University of Chicago Press. (Original work published in 1872).

References

- * DiLalla, L.F., Kagan, J., & Reznick, J.S. (1994). Genetic etiology of behavioral inhibition among 2 year old children. *Infant Behavior and Development*, 17, 405-412.
- * Emde, R.N., Plomin, R., Robinson, J., Corley, R., DeFries, J., Fulker, D.W., Reznick, J.S., Campos, J., Kagan, J., & Zahn-Waxler, C. (1992). Temperament, emotion and cognition at fourteen months: The MacArthur Longitudinal Twin Study. *Child development*, 63, 1437-1455.

References

- * Feiring, C., Lewis, M., & Starr, M.D. (1984). Indirect effects and infants' reaction to strangers. *Developmental Psychology*, 20, 485-491.
- * Harris, P.L. (1989). *Children and Emotion*. Oxford; Basil Blackwell.
- * Harris, P.L., Olthof, T., Terwogt, M.M., & Hardman, C.E. (1987). Children's knowledge of the situations that provoke emotion. *International Journal of Behavioural Development*, 10, 319-343.

References

- * Harter, S. (1998). The development of self-representations. In W. Damon (Series Ed.) & N. Eisenberg (Vol Ed.), *Handbook of Child Psychology: Vol. 3. Social, Emotional and Personality Development* (5th Ed., pp. 553-617). New York: Wiley.
- * Harter, S. (1999). *The Cognitive and Social Construction of the Developing Self*. New York; Guilford Press.

References

- * Harter, S., & Buddin, B.J. (1987). Children's understanding of the simultaneity of two emotions: A five-stage developmental acquisition sequence. *Developmental Psychology*, 23, 388-399.
- * Haviland, J.M. & Lelwica, M. (1987). The induced affect response: 10 week-old infants' responses to three emotional expressions. *Developmental Psychology*, 23, 97-104.

References

- * Hiatt, S.W., Campos, J.J., & Emde, R.N. (1979). Facial patterning and infant emotional expression: happiness, surprise and fear. *Child Development*, 64, 391-403.
- * Klinnert, M.D. (1984). The regulation of infant behaviour by maternal facial expression. *Infant Behaviour and Development*, 7, 447-465.

References

- * Klinnert, M.D., Emde, R.N., Butterfield, P., & Campos, J.J. (1986). Social referencing: the infant's use of emotional signals from a friendly adult with mother present. *Developmental Psychology*, 22, 427-432.
- * Michalson, L., & Lewis, M. (1985). What do children know about emotions and when do they know it? In M.Lewis & C. Saarni (Eds.), *The socialization of emotions* (pp. 117-139). New York: Plenum.

References

- * Lagattuta, K.H., Wellman, H.M., & Flavell, J.H. (1997). Preschoolers' understanding of the link between thinking and feeling: Cognitive cuing and emotional change. *Child Development*, 68, 1081-1104.
- * Pedlow, R., Sanson, A., Prior, M., & Oberklaid, F. (1993). Stability of maternally reported temperament from infancy to 8 yrs. *Developmental Psychology*, 29, 998-1007.

References

- * Rosenstein, D., & Oster, H. (1988). Differential facial responses to four basic tastes in newborns. *Child Development*, 59, 1555-1568.
- * Rothbart, M.K, Ahadi, S.A., & Evans, D.E. (2000). Temperament and personality: Origins and outcome. *Journal of Personality and Social Psychology*, 78, 122-135.

References

- * Saarni, C. (1984). An observational study of children's attempts to monitor their expressive behaviour. *Child Development*, 55, 1504-1513.

References

- * Schmitz, S., Fulker, D.W., Plomin, R., Zahn-Waxler, C., Emde, R.N., & DeFries, J.C. (1999). Temperament and problem behaviour during early childhood. *International Journal of Behavioural Development*, 23, 333-355.

References

- * Sorce, J.F., Emde, R.N., Campos, J.J., & Klinnert, M.D. (1985). Maternal emotional signalling: its effects on the visual cliff behaviour of 1-year-olds. *Developmental Psychology*, 21, 195-200.
- * Thomas, A., & Chess, S. (1977). *Temperament and Development*. New York: Brunner/Mazel.