



# WHAT HAS RESEARCH TAUGHT US

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## INTRODUCTION

The programme for caregivers that was developed by ICDP had been influenced particularly strongly by two broad areas of research: the research into early interaction on one hand, and the socially oriented theories of development such as Vygotsky's and including subsequent research by Vygotsky's followers.

Research has over the last decades confirmed the significance of the early interactive relationship between the mother and the baby for the baby's future development. There is an early disposition in the infant towards establishing an expressive exchange in relation to the caregiver. This disposition towards expressive communication or co-operation, sometimes also described as an action-dialogue appears shortly after birth and expands and develops into more advanced forms of sharing at a higher age-level.

Studies by Trevarthen (1987), Stern (1985), Braaten (1990) and others, revealed that this primordial code of emotional-expressive inter-subjectivity is mastered so early in infancy that it is assumed to be biologically pre-programmed. The infant is searching contact, usually with the mother, who tunes in, matches and reflects his or her feelings and gestures in a reciprocal expressive dialogue. The early dialogue forms a basis for further development with regard to affect and social development (Stern 1985, Trevarthen 1987, Orion group 1987, Aarts 1990, Braathen 1987), as well as to language and cognition (Shaeffer 1984, Bruner 1988, Vygotsky 1978).

The research into early interaction confirms more socially oriented theories of development, such as Vygotsky's, who insisted that our mental operations have their origins in early social interactions and that the quality of interaction between caregiver and child is decisive for the child's higher mental development. This implies that, not only our affective social relationships and bonds, but also our cognitive operations have their origin in the early interaction between caregiver and child; mental operations are by nature social and interactive, according to this view.

We know from this research that the key to the child's future development does not depend upon a specific set of activities but rather on the general quality of interaction between the child and the primary caregiver. The 8 guidelines for good interaction of the ICDP programme represent aspects of the adult-child interaction that are crucial for normal human development. It can be said that the 8 guidelines of the ICDP programme constitute a set of basic criteria that define what good quality interaction is.

In this document there are very short summaries of some of these basic studies about child development and theories that together represent the essential theoretical background that had influenced the formulation of the ICDP programme.

## PRACTICAL WAY TO INTRODUCE STUDIES AND THEORIES

In our projects in South America and other countries around the world we used this document not only as reading material but also in our ICDP workshops. We used the document in the following two ways:

1 One way of introducing these studies to a group is to make 3 posters (see below); divide the ICDP participants into 3 groups, each group to study one of the posters. Afterwards the studies from each poster are explained by the groups and their significance in relation to the ICDP guidelines for good interaction is discussed by all.

### POSTER 1

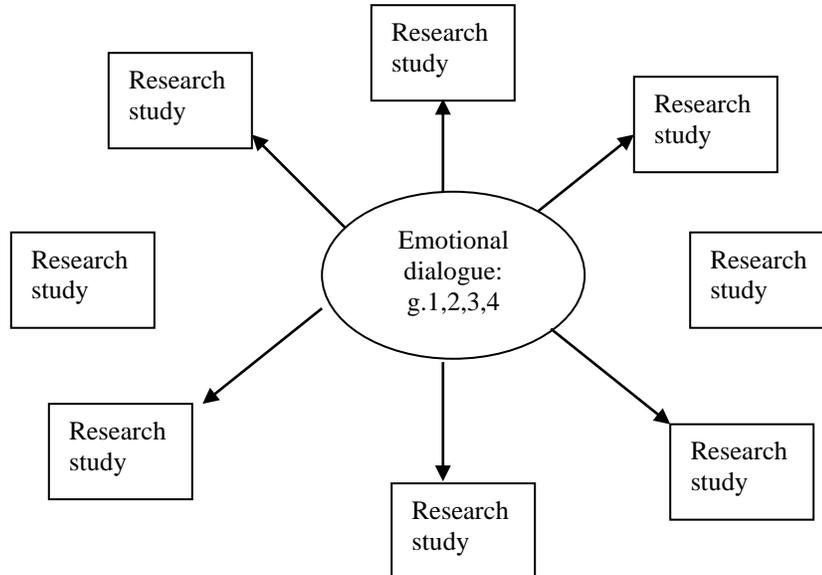
At the centre of a large piece of card board draw a circle and write inside: Emotional dialogue – Guidelines 1,2,3 and 4. Then photocopy and cut out some of the studies which demonstrate the significance of the emotional dialogue and glue them all around the circle, connecting each study to the circle with an arrow.

### POSTER 2

At the centre of a large piece of card board draw a circle and write inside: Comprehension dialogue (providing meaning) – Guidelines 5,6,7. Then photocopy and cut out studies connected to this dialogue and glue them all around the circle, connecting each study to the circle with an arrow.

### POSTER 3

At the centre of a large piece of card board draw a circle and write inside: Regulative dialogue. Then photocopy and cut out studies connected to the regulative dialogue and glue them all around the circle, connecting each study to the circle with an arrow.



2 Another way is to have the studies printed, each study cut separately and put in a pile; participants are divided in small groups and each group randomly takes a number of studies to discuss and afterwards explain to each other.

## WHAT HAS RESEARCH TAUGHT US

The studies and theories described on the following pages were considered important by the founders of the ICDP programme.

Trainers need to be able to present the link between some of the key studies and the 8 guidelines/3 dialogues, in written form for certification.

Trainers are also meant to use some of this material to deepen the meaning of the topics that they are introducing at the workshop for facilitators.

In addition, trainers need to select a few of the most relevant studies for facilitators to learn to present to caregivers when they run groups.



### **1. WHAT A BABY NEEDS MOST IS A LONG-TERM RELATIONSHIP BASED ON LOVE**

Basic starting point for human psychological development is the formation of an enduring, loving relationship between the baby and either one or a small group of carers. This is a universal feature, both across and within cultures.

### **2. THE BASIC TRUST IN ADULTS STEMS FROM A LOVING RELATIONSHIP WITH OWN MOTHER AS A BABY**

According to psychoanalyst Erik Erikson, if as a child you had an indulgent, loving mother (or it could be father or any primary caregiver) during the first 2 years of life, you will develop a basic trusting attitude towards the world and life itself, which you could rely on for the rest of

your life to pull you through psychological challenges. If you didn't, you might be permanently plagued by insecurity, anxiety and sadness.

### **3. CHILDREN DEPRIVED OF CONTACT AND STIMULATION**



This brain scan of a child from Romanian orphanage shows what can happen to the brain when a child receives basic physical care but is deprived of love, affection, and comfort. The black areas in this brain scan show inactive areas in the temporal lobes – part of the brain which is vital for processing and regulating emotions. Temporal lobe inactivity can result in poor social and emotional intelligence.



This is a brain scan of a child who has received loving parenting. In contrast to the brain scan of the Romanian child there are few black areas, meaning that the temporal lobes are fully active.

Children in institutions, deprived of meaningful human contact, with only their physical needs being cared for, have been described by many researchers – such children show symptoms of apathy and withdrawal, or restlessness, hyperactivity, inability to concentrate, and craving for affection. These children are behind in all areas of development: motor, language, social, emotional and intellectual skills.

#### 4. EXPERIMENTS HAVE SHOWN THIS TO BE TRUE FOR ANIMALS TOO

Robert Hinde, of Cambridge University in England, spent 20 years studying behaviour in monkeys. He showed decisively that the subtleties of mother-infant relations were correlated with the development of independence. But more importantly, he showed that quite brief separations of the mother from the infant – as little as six days – had lasting effects on the infant, making it more fearful at two years of age. Young primates deprived of this relationship in infancy, may grow up with severe abnormalities, such as stereotyped rocking or self-biting, hyper aggressiveness, sexual incompetence, and even abusive parenting.

Similar studies were conducted by Harry and Margaret Harlow with rhesus monkeys in USA (1958,1969). Isolation of a young monkey for 6 months produced irreversible effects; they were unable to mate satisfactorily and if a female did have a baby, she abused it rather than care for it.



#### 5. THE IMPORTANCE OF SIMPLE INTERACTION PROGRAMMES

In a study in an orphanage in Iran (where children were found to be under-developed), McVicker Hunt (1982) showed that it is possible to make a dramatic difference in the psycho-social development of institutionalised children, with a simple interaction programme.

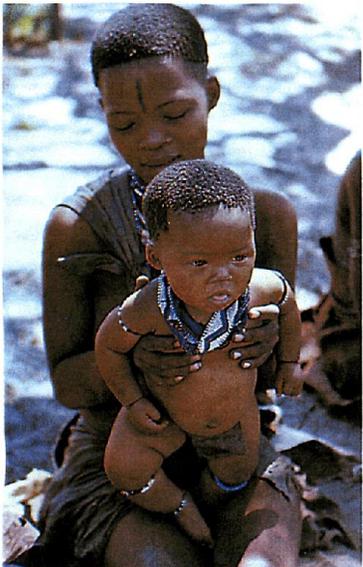
In this programme caregivers were instructed to be responsive to the needs of the children as soon as these are expressed, show them love, play with them and in addition they were instructed to imitate the babbling sounds of the babies in their care. The children in the experimental group became alert and interested, their language development became normal and the difference in terms of IQ was of 47 points compared to the control group.

Another study (Skeels, 1966), followed up 25 children raised in an institution. The experimental group, consisting of 13 children evaluated as severely behind in development, were transferred before their third birthdays, from the institution in which they were raised to an institution for girls. Each child was "adopted" by one of the older girls and was given responsibility for "her" child. The comparison group consisted of 12 children whose age, intelligence and general background corresponded to those of the transferred children and who remained in their original institutional environment.

A follow-up study two and a half years later showed the "adopted" children to be functioning at a significantly higher level (32 IQ points) than those who remained behind and were not adopted. Furthermore, the control group exhibited a drop of about 21 IQ points relative to their level at the outset of the study.

A follow-up about twenty years after the transfer showed that the "adopted" group's superiority over the control group continued. In the experimental group, all the individuals were independent, had completed on the average, twelve years of schooling, and four had one or more years of university education. In contrast, in the comparison group, the average level of schooling was four years. Most of the individuals lived in and were supported by government institutions, and none was independent.

## 6. BABIES NEED A SAFE BASE FROM WHICH THEY CAN EXPLORE THE WORLD



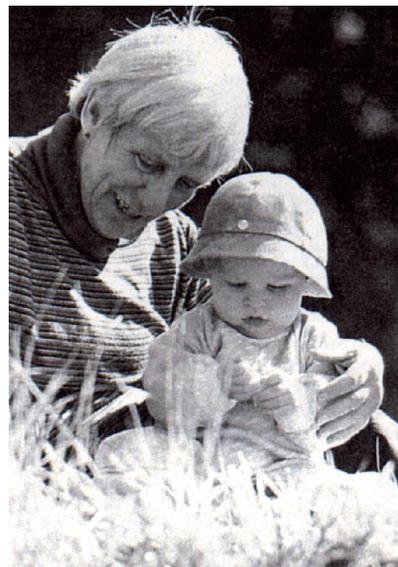
In John Bowlby's theory of attachment mother-infant bond is an evolutionary adaptation – love has a practical purpose of keeping the infants close to their mother and preventing them from straying away into the jaws of predators. Mother is like a safe base from which the infant explores the world.

According to Bowlby's 'maternal deprivation' hypothesis children should not be deprived of contact with the mother. In 1953 he proposed that "mother's love in infancy and childhood is as important for mental health as are vitamins and proteins for physical health."

Later research has produced evidence that the effects of maternal deprivation are not completely irreversible if the right corrective treatment is used.



**Attachment:**  
*An emotional tie binding people together over space and time*



*Infants become attached to a number of people, including their grandparents. The nature of the attachment depends upon the quality of relationship between the child and caregiver.*

## 7. “GOOD ATTUNEMENT NOW, GOOD ATTACHMENT LATER” – IF WE SHOW THEM PLENTY OF LOVE, BABIES WILL GET ATTACHED TO US AND WE TO THEM

Bowlby's follower, Mary Ainsworth went on to develop in 1978, a method (known as the 'strange situation') for assessing how well attached an individual infant is to her mother or caregiver.

In spite certain criticisms, this method is still commonly and internationally used.

Ainsworth's study demonstrated that the sensitivity of the mother to the baby (attunement), as assessed in the home at six months of age, predicted secure attachment of the baby at twelve months.

Sensitivity is defined as responsiveness to the baby's special needs, moods and signals, whatever these might be.

Consider Ainsworth's classic experiment to measure attachment at one year of age:

A baby plays beside her mother, occupying herself with toys on the floor, for 3 minutes in an ordinary room strange to the baby. A stranger, a woman comes in, sits for a minute talks with the mother a minute, tries to engage the baby a minute. Then the mother leaves. She returns a few minutes later.

How does the baby react on reunion with her mother?

Three main types of responses were identified:

1. Securely attached babies are those who freely greet their mothers on reunion, labelled as group **B**.
2. Babies who avoid or ignore predominantly mothers on reunion are labelled avoidant group **A**.
3. Babies who mix anger and rejection, with some attempts to contact the mother are called resistant or ambivalent, group **C**.

The majority of babies are securely attached; both A and C babies are said to be insecurely attached.

**Children with secure attachment:** In homes, the mothers of these children with secure attachment were very sensitive and responsive to the calls of their children, being available whenever they needed them. Bowlby: An individual who has experienced a secure attachment from the beginning of his life "probably has a model of representation of his attachment figure as someone available, responsive and attentive." This bond is of vital importance for the later development of a healthy personality.

**Children of anxious / ambivalent attachment:** In their homes, the mothers of children of anxious or ambivalent attachment behaved inconsistently, being sensitive and affectionate with their children in some cases but cold and insensitive in others. These patterns of behaviour make children feel insecure about their mothers being really available when they need it or not.

**Children of avoidant attachment:** The mothers of these children are relatively insensitive to the requests and needs of their children. The children seem very insecure and in some cases very worried about the proximity of their mother, crying intensely when the mother leaves. Ainsworth's overall interpretation states that, when these children enter the Stranger's Situation, they understand that they do not have the support of their mothers and react in a defensive way by acting indifferently. As they have received many rejections in the past, they try to deny that they need their mothers to face their frustrations.

Later, after conducting various studies and observations, another type of attachment was added, the disorganized one. Children exhibit a confusing mix of behaviours and may seem disoriented. They may resist or directly avoid their parents. In these cases, the parents have surely served as a source of comfort and, at the same time, as a source of fear, leading to disorganized behaviour.

## AINSWORTH'S THE STRANGE SITUATION TECHNIQUE

The procedure consists of a series of episodes involving collaboration between the experimenter and mother. Throughout the infant's behavior is recorded either on video tape camera, or by an unseen observer sitting behind a two-way mirror.



1. The infant and his mother are brought into a comfortably furnished laboratory playroom and the child has an opportunity to explore this new environment



2. Another female adult, whom the child does not know, enters the room and sits talking in a friendly way, first to the mother and then to the child.



3. While the stranger is talking to the child the mother leaves the room, unobtrusively, at a prearranged signal.



4. The stranger tries to interact with the child.



5. Mother returns and the stranger leaves her together with the child.



6. Mother then goes out of the room leaving the child there alone.



7. The stranger returns and stays in the room with the child.



8. The mother returns again.

Each of these separate episodes lasts for three minutes at the most, but less if the child becomes very distressed. The video record is scored in terms of the child's behaviour directed towards the caregiver:

- Seeking contact.
- Maintaining contact.
- Avoidance of contact.
- Resistance to contact.

## CONSEQUENCES OF THE TYPE OF ATTACHMENT

The type of attachment that is created between the child and the primary caregiver is not only relevant during childhood; It also has important consequences when the child reaches adolescence and adulthood. The type of attachment affects the way in which individuals perceive themselves and other people, and determines to a large extent their relationships.

- In general, individuals with secure attachment are warmer, more stable, and tend to have more satisfying relationships. They usually have a coherent vision of themselves, they believe that they deserve to receive love and they have no problem trusting other people.
- Individuals with anxious / ambivalent attachment feel more insecure at the time of relating, but, at the same time, they have a desire for intimacy.
- Finally, individuals with avoidance attachment are also insecure for relationships, but they tend to avoid them and are detached from other people.

The representation models of the type of attachment represent oneself, others and interpersonal relationships. They are constructed from the interactions with the caregiver or primary caregivers and the emotions that the child feels from those interactions. The interactions and associated emotions are internalized mentally and create expectations for the following interactions ("inner working model").

However, generational transmission of the inner working model is not inevitable:

For example, the establishment of a satisfactory relationship, or the experience of motherhood, could lead to a reworking of this inner working model. Therefore, it is possible that, a person who has been rejected by their parents during their childhood, does not treat her/his children in the same way.

## 8. BABIES SEEK OTHER PEOPLE TO INTERACT AND LIKE CONTACT – THEY HAVE SOCIAL NATURES



Professor Colwyn Trevarthen, from Edinburgh University, studied videotapes of mothers and babies together, beginning in the first weeks of life and his work confirmed the view that humans are born with a predisposition to seek and respond to human interaction.

There are two stages in this ability to interact:

First, the baby takes delight in face-to-face interaction (primary intersubjectivity) and she seems to know something about what the other person is thinking or feeling.

Even at 4 months of age, the baby can be comforted by tracking the mother's reaction to new events. She will often search the mother's face for clues about how to react. If the mother is smiling to loud music, baby's initial wariness will turn to pleasure.



But later, around 9 months, the baby develops a new tendency – what appears to be an intentional sharing of experiences.

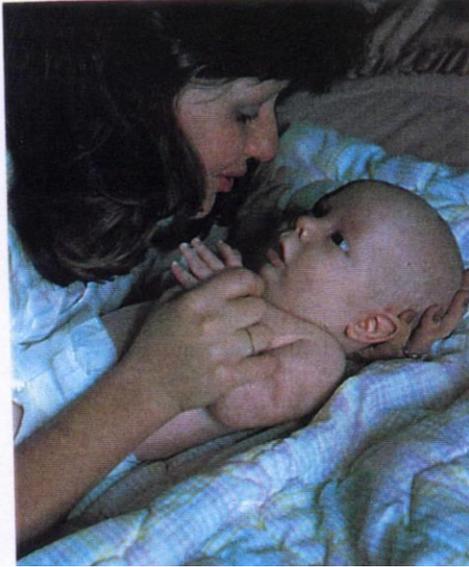
This new, secondary intersubjectivity, involves not only mother and baby, but objects too. The baby would point to an object and wait for the mother to notice it. She will now intentionally check the mother's face to find out how she is reacting to the appearance of a new or strange object.



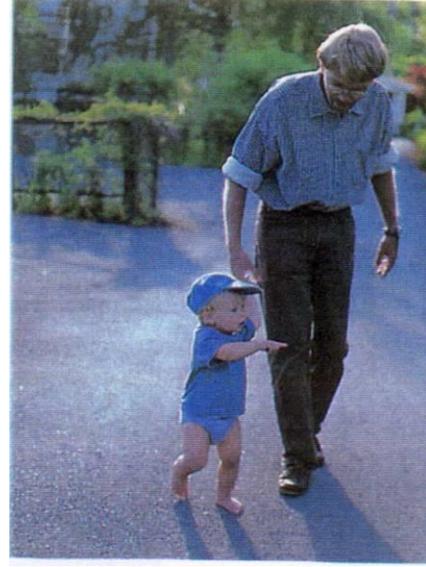
Infants are born ready to interact. Most remarkably, a few minutes old baby may imitate eye-widening, mouth-opening, tongue-protrusion, as well as vocalizations



Even young children use 'motherese/parentese talking' with babies, which consists of talking in shorter sentences and in a higher pitched voice



Close face-to-face interaction is typical for primary inter-subjectivity. Babies can focus either on a person or on an object, but they cannot focus on both at the same time.



Secondary inter-subjectivity, involves sharing about things, not only sharing each other. Babies can now focus on both persons and objects at the same time.

This new tendency is also called ‘co-operative awareness’ or ‘social referencing’; and it is of considerable importance for the baby. The fact that the baby deliberately seeks to share experiences about things and events with others gives a new dimension to the process of learning. The baby has entered a realm in which her searching and experiments are guided by a loving eye – the baby does not wish to test the world alone. She wants to know what the others think about things around her. The baby has become a potentially inter-subjective partner, and is ready to start partaking in the complex world of relationships and meanings that constitute any given culture.

According to Michael Tomasello (1999) ‘human cognition begins to differ in important ways from nonhuman primate cognition around one to two years of age with joint attention (secondary inter-subjectivity), language acquisition and other forms of cultural learning. Human social cognition is composed fundamentally of the understanding of intentionality – ability to understand other humans as intentional or mental agents, just like oneself, which starts to develop already with babies at around 9 months. Thus humans learn not only from but also through the other’s experience which in turn gives them the ability to be participants in cumulative cultural evolution.

## **9. WHEN THERE IS AFFECT ATTUNEMENT BABY UNDERSTANDS THAT YOU UNDERSTAND HER**

Also around 9 months there is a new development in the way imitation takes place between mother and baby. The mother begins to expand her behaviour beyond true imitation into a behaviour called by professor Daniel Stern ‘affect attunement’.

Affect attunement is very different from simple imitation. Instead of simply imitating what the child does, the mother tunes in to the inner feeling state of the baby and expresses it in a different way (in another modality), but still expressing the same quality of feeling which she acknowledges in the baby. According to Stern: 'To let the baby know you sense how she feels, you have to play back her feelings in another way. Then the baby knows she is understood.'

Two examples:

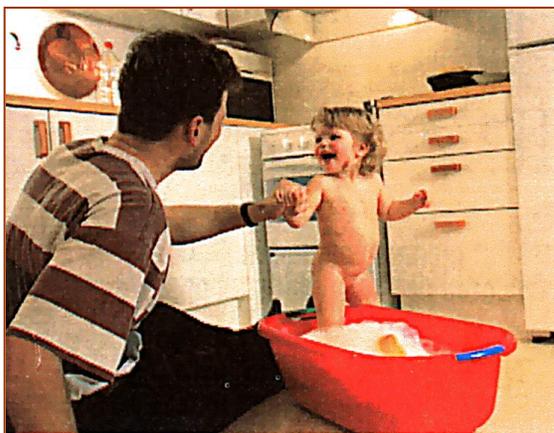
1. A baby squeals with delight, the mother affirms that delight by cooing or giving baby a gentle shake or matching the pitch of her voice to the baby's squeal.
2. A nine month old boy reaches for a toy just beyond reach. Silently he stretches towards it, leaning and extending arms and fingers out fully. Still short of the toy, he tenses his body to squeeze out the extra inch he needs to reach it. At that moment, his mother says, "uuuuuuh.....uuuuuuuuuh" with a crescendo of vocal effort...". The mother's accelerating vocal-respiratory effort matches the infant's accelerating physical effort.



An example of simple imitation:

Grandmother smiles at the baby and the baby smiles back which will lead to a cycle of turn taking in imitation of each others facial expressions and vocalizations.

The simple type of imitation changes to more complex behaviour by the caregiver when the baby is around 9 months, when it is called 'affect attunement':



An example of 'affect attunement':

The baby screamed with pleasure and jumped into the bath showing delight at the prospect of playing with water; father attuned to the feeling state of the child which he reflected in his accelerated, excited speech repeating 'Water is nice, water is nice, what fun for you!' and by matching the pitch of the child's scream with the pitch of his own voice ...

This is like ‘dancing with the child’ in the same rhythm and in the same ‘key’, but in a different modality. According to Stern, this is one of the most potent methods that caregivers can apply to regulate or ‘shape’ the development of a child’s subjective and interpersonal life.

Although this matching normally takes place without reflective awareness, it is possible to exercise affect attunement, i.e. by trying to vocalize in rhythm and in pitch to the child’s actions and excitement, or by making movements corresponding to the child’s vocal expressions and feeling state. For a caregiver who is sensitised and in close emotional contact with a child such attunements come easily and without effort.

## 10. THE ABILITY TO “MENTALIZE”

According to the British psychoanalyst and researcher Peter Fonagy the most important quality in compassionate care is the ability to “mentalize” (Allen and Fonagy 2006).

Mentalization can be defined as keeping one’s own state, desires and goals in mind as one addresses one’s own experience; and keeping another’s state, desires and goals in mind as one interprets his or her behaviour.

Simply put, each one of us has the capacity to be a simple self, a self that experiences the world directly – for example, feels cold, happy, angry, and so forth. But we also can access a more complex self; a self that looks at itself, a self that takes itself as object of thought and reflection – for example, I see that I was depressed or excited when I said or did such and such a thing. In short, mentalization can be thought of as having empathy for oneself but there is the other aspect as well, which is understanding the behaviour of others from the point of view of their feelings and needs. Below follow two examples, one from an exhausted and highly stressed mother who is wakened up during the night by her crying baby:

1. “You little devil, are you doing this just to torment me? How dare you wake me up like this? Go to sleep at once and do not bother me anymore!”
2. Another mother’s reaction in the same situation: “Poor you, what is wrong now? Are you too hot or have you wet yourself? Have you had a bad dream?” She takes the baby up and does what she can to console and calm the baby. After a few minutes the whole family is sleeping peacefully again (Holmes 2005, p. 34).

1. In the first example the mother is responding solely from her own feelings of annoyance. She seems to be unable to see the child’s reactions from the point of view of the child’s feelings and needs in the situation.

2. In the second case the mother is aware of her state of annoyance, but decides to control it as she goes to the child; she empathizes with the child and tries to interpret (mentalize) what the child is experiencing and feeling when he reacts with loud crying. She puts herself in the child’s situation and she reacts on the basis of her assumption of what she believes the child has experienced.

The four disparate anecdotes below can be compared by using the concept of mentalization. The first and second are examples of the absence of mentalization, and the third and fourth indicate high levels of mentalization:

1. A boy, observed by Kanner, is enjoying a summer day at the beach. He spots something in the distance that captures his interest. Off he goes, straight towards his goal. But on the way he steps over everything in his path: blankets, newspapers, hands, feet, torsos.
2. A mother observing a videotape of her son crying is asked what she thinks is going on. She replies, “He always does that, he is OK.”
3. A boy, aged eight, notices a scowl on his mother’s face and asks, “Mommy are you angry at me or are you just in a bad mood or upset about something else?”

4. Mother observes a video tape of her daughter at school having a temper tantrum and reflects that she thought her daughter was upset that day because she was getting a cold and was feeling exhausted and sick.

Mentalization has implications for attachment theory as well as self-development. Attachment history partially determines the strength of mentalizing capacity of individuals. Individuals without proper attachment (e.g. due to physical, psychological or sexual abuse), can have greater difficulties in the development of mentalization-abilities. Securely-attached individuals tend to have had a mentalizing primary caregiver, and resultantly have more robust capacities to represent the states of their own and other people's minds.

A recap on development of modern attachment theory:

John Bowlby provided the original theoretical statement of attachment as the fundament of human relatedness.

Mary Ainsworth, in turn, invented a novel procedure, whereby the status of attachment could be reliably measured in one-year-old toddlers, with the result correlated with maternal behaviours during infancy. Mary Main devised a research instrument, the Adult Attachment interview, which could predict the quality of the child's attachment on the basis of the parents' individual responses to questions about their parents.

Peter Fonagy and his collaborators made a startling new discovery. Mentalization defined as the capacity to be specifically aware of mental states as such and to use this awareness in regulating affect and negotiating interpersonal relationships, provides a critical link in the transmission of attachment security across generations. That is to say, mothers and fathers who scored high on this dimension in the Adult Attachment Interview tended to have children who were secure. And, importantly, this was true even though the parents might themselves have had a history of past trauma or current unresolved grief, factors which were otherwise likely to impact negatively on the security of their children. Insight is not only good for you, but it is even better for your children. Early childhood exposure to mentalization can serve to protect the individual from psychosocial adversity.

Fonagy and his collaborators also discovered that secure children tended to develop rudiments of the capacity of mentalization faster than did their insecurely attached peers.

Quite separately, it also emerged that in adult borderline patients (with a mental disorder characterised by the instability in mood, behaviour, and functioning) the capacity for mentalization appeared to be severely compromised, and that this deficit could be meaningfully linked to their own history of abuse and neglect as children.

Finally, it appeared that the concept of mentalization could be utilized to provide a unique lens for interpreting the data from a large outcome study of the treatment of children conducted at the Anna Freud Centre.

The concept of mentalization is useful to clinical work in a broad spectrum of settings and in relation to varieties of clinical challenges.

## **11. THE COSTS OF MISATTUNEMENT OR LACK OF EMPATHY**

When parents are mis-attuned to the child it is deeply upsetting. The lifetime emotional costs of lack of attunement in childhood can be great. A study of criminals who committed the cruellest and most violent crimes found that the one characteristic of their early lives that set them apart from other criminals was that they had been shuttled from foster home to foster home, or raised in orphanages – life histories that suggest emotional neglect and little opportunity for attunement.

There are several studies in which mother child interactions were artificially disrupted in some way or another and from these studies we have evidence that babies are sensitive to the adult responsiveness. In one such study, 'the still face study' (Tronick et al., 1978) babies have shown quite distinctive distressing reactions when their mothers suddenly were asked to make their faces expressionless in face to face interactions with them.

In another experiment, Daniel Stern had mothers deliberately over- or under-respond to their infants, rather than matching them in an attuned way; the infants responded with immediate dismay and distress. One mother in Stern's study consistently under reacted to her baby's level of activity; eventually her baby learned to be passive. 'An infant treated that way learns, when I get excited, I can't get my mother to be equally excited, so I may as well not try at all,' Stern contends.

Prolonged absence of attunement between parents and child takes a tremendous emotional toll on the child. When a parent consistently fails to show any empathy with a particular range of emotion in the child – joys, tears, needing to cuddle – the child begins to avoid expressing, and perhaps even feeling those same emotions. In this way, an entire range of emotion can begin to be obliterated from the repertoire for intimate relations, especially if through childhood those feelings continue to be covertly or overtly discouraged.

But there is hope in 'reparative' relationship, according to Stern: 'Relationships throughout life – with friends or relatives, for example, or in psychotherapy – continually reshape your inner working model of relationships. An imbalance at one point can be corrected later; it's an ongoing, lifelong process.'

## **12. BABIES HAVE CAPACITY FOR EMPATHY SURPRISINGLY EARLY**

Research on empathy suggests that young children have greater appreciation of other people as thinking and feeling individuals than was thought at one time.

Zahn-Waxler and Radke-Yarrow (1982) trained mothers to keep record of what their children did when witnessing naturally occurring expressions of emotion in other people. It was found that even 10 months old children showed signs of distress themselves upon seeing distress in others.

From the second year on, research has shown that children actively offer help to the person in distress, the kind of help they themselves would find comforting. For example, they may offer their own comfort blanket or teddy.

In the third year, with the emergence of role taking skills, children become aware that other people's feelings can differ from their own. Their empathic responses to distress thus become more appropriate to the other person's need.

## **13. YOUNG CHILDREN DISCUSS INTERNAL STATES WITH OTHERS**

As result of a range of studies, (both from experimental studies and naturalistic studies on children within their families) we have gained appreciation of very young children's social awareness and understanding. From their second year, children are increasingly articulate participants in discussion of their own relationships, those of others and more generally of the rules and expectations within their own social worlds (Dunn 1988).

Studies by Judy Dunn (1991) showed that children talk about internal states already from the age of 2 years (desire and feeling state terms are used such as want, need, sleepy, bored, happy etc.), and about half a year later mental state terms such as know, think, pretend.

Such references are made to other people also, particularly from the 3<sup>rd</sup> year of life, indicating a sharp interest in feelings and desires of others. Children approaching the age of 3, can share and negotiate

interpretations of events with others and can talk about their respective understanding of the psychological causes of behaviour.

What is also clear, however, is that the ability to talk about inner states has profound implications for children's social interactions, adding greatly to their effectiveness as teasers, comforters, and deceivers, as well as excusers of their own and other's actions when in trouble.

Research has also shown that the amount that mothers talk about feelings relates to the amount that their children talk about them.

## **14. THE IMPORTANCE OF GIVING ENCOURAGEMENT AND ATTENTION TO CHILD'S INITIATIVES**



Young children have ideas for doing things. If they are told their ideas are worthwhile and acted upon, they gain a sense of initiative. It is important to follow and encourage the initiative of the child since this will develop a sense of mastery and independence.

Research has shown that parents' behaviour directly affects the independent exploratory behaviour of the infant.

Infants whose parents restrict their exploration do not perform as well on infant developmental tests; whereas, infants whose parents provide many opportunities for exploration and reinforce their infants attempts to play with objects perform well on such tests.

In a study by Rubenstein in 1967, mothers were instructed to provide varied amounts of attentiveness to their infants for a month. At the end of the month, the infants' exploratory behaviour towards new stimulus (it was a bell) was observed with following results:

The first group of infants whose mothers were high in attentiveness showed more exploratory behaviour than the second and third group of children with mothers whose attentiveness was medium or low. The first group of infants explored the bell with interest and in fact preferred it to the familiar objects. In comparison, the medium and the low maternal attentiveness infants showed less interest in the bell.



Another demonstration of the same phenomenon is the study by Yarrow and his colleagues, which showed that infants whose mothers respond positively to their infants vocalizations manipulate novel toys more often than infants who do not receive those responses.

The ability to follow the initiatives of the child and maternal encouragement and attention in infancy have also been used to predict competence in language, play and cognition.

## **15. TALKING ABOUT WHAT THE CHILD IS PREOCCUPIED WITH DEVELOPS ITS LANGUAGE**

Parents who focus on the initiative of the child and talk about what the child is preoccupied with help enrich the child's language repertoire.

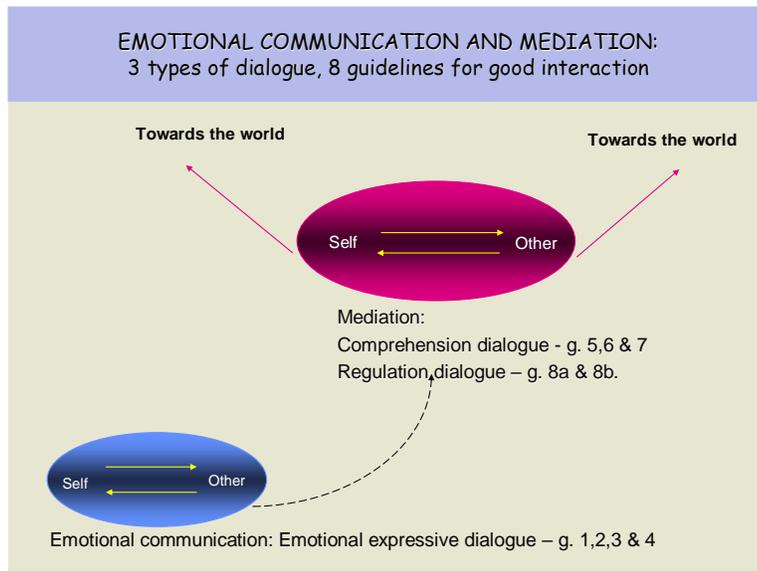
Michael Tomasello and Michael Farrar explored the role of joint attentional processes in the child's acquisition of language. In the 1st study, 24 children were videotaped at ages 15 and 21 month in

naturalistic interaction with their mothers. Episodes of joint attentional focus between mother and child (e.g., joint play with an object) were identified. Inside as opposed to outside these episodes, both mothers and children produced more utterances, mothers used shorter sentences and more comments, and dyads engaged in longer conversations. Inside joint episodes maternal references to objects that were already the child's focus of attention were positively correlated with the child's vocabulary at 21 months, while object references that attempted to redirect the child's attention were negatively correlated. In Study 2, an adult attempted to teach novel words to 10 14–23 months olds. Results show that words referring to objects on which the child's attention was already focused were learned better than words presented in an attempt to redirect the child's attentional focus. (Tomasello, M., & Farrar, M. J. (1986). Joint attention and early language. *Child Development*, 57(6), 1454–1463. <https://doi.org/10.2307/1130423>)

They showed that in teaching toddlers the names of unfamiliar objects, such as hammer and spanner, the parents could best ensure learning by ‘following-in’ to the child’s focus of attention. Parents in the experimental group were told to say a sentence emphasizing the word hammer only when the child was already playing with the hammer. Parents in the control group were told to say the word spanner with equal emphasis, but only when the child was not playing with anything. Two weeks later the children understood hammer better than spanner.

## 16. THERE ARE 2 SYSTEMS OF COMMUNICATION THAT FUNCTION IN PARALLEL:

1. A very basic emotional-expressive system communicated through gestures and body language.
2. Evolved from the first, is the mediational system, directed towards exploring, enriching and mastering the child’s surrounding world.



Both of these systems co-exist, but the one or the other may come to the foreground/background depending on the situation and the conditions of interaction between caregiver and infant. The early expressive dialogue dominates the interaction between baby and carer in the first months of life, while mediation comes in more strongly later when the infant has established what Trevarthen calls secondary intersubjectivity at about nine months of age.

Towards the end of the first year, children begin to seek involvement from caregivers in their explorations of the world. This is the time for ‘guided participation’, term used by B. Rogoff or ‘mediated learning experiences’ term used by R. Feuerstein and P. Klein, both of which emphasise the importance of the role of caregivers as guides to the children in their efforts to find out more about the world and things which

surround them. The adult becomes an interpreter or ‘mediator’ between the world and the child; by talking, explaining and participating in the child’s experience the adult enriches the child’s world, gives it more meaning and introduces the child to his/her own culture.

In Feuerstein’s theory of ‘mediated learning experience’ (MLE), the adult organises the stimulus in time and space, relates the new experience to previous events and to those that will occur in the future; the child is taught how to focus, to observe and to differentiate. The 3 mediational guidelines of the ICDP programme, namely, focusing, giving meaning and expanding (transcending) relate to this theory, and the MISC programme by P.Klein.

The 10-minute observation of mother-child interactions in infancy and up to two years of age, using criteria of observation based on MLE, predicted cognitive performance of the same children at four years of age. In a four year follow up study of children and their high-risk mothers (Klein, Wieder and Greenspan, 1986), mother’s free play sessions with their infants were videotaped when infants reached 4,8,12,24 and 36 months. Interaction profiles made of mothers and infants at around one year of age had high value in predicting the rate of success of the same children in their performance at preschools (4 years later). Significant and high stability over time was reported in the above-mentioned study, as well as in another longitudinal study of middle-class Israeli infants and their mothers conducted by P. Klein.



-Focusing requires intentionality and reciprocity. Without intentionality there is no direction and without reciprocity the caregiver is out of touch with the child’s focus of attention, interest or ‘world’. Key phrase: *Look here!*”

-Mediation of meaning (providing explanations) has an affectionate energizing aspect that provides distinctiveness to the object already in focus. The caregiver expresses enthusiasm for a beautiful flower, which makes the stimulus ‘stand out’ and become distinctive to the child. Key phrase: *”What is this?”*”

-Mediation of transcendence (or expansion) refers to the linking of the present situation with something that is not present from the past or the future, a comparison an explanation, a story, a song, other artistic expressions or even a logical or mathematical reference. This is an elaborate style of interaction, which can be developed using some of the following questions: *”Have you seen such a thing before? What does it remind you of? Do you know why it is made like this? What can it be used for? Anything else? I remember my father once had such a ... and he...”*

## CHANGE IN TRENDS IN CHILD PSYCHOLOGY, FROM PIAGET TO VYGOTSKY

### 17. JEAN PIAGET – A MAJOR INFLUENCE

A major influence on our views of children's learning has been the work of Jean Piaget. He believed that children learn through being actively involved with the world around them, testing out their hunches about how things work and adapting these hunches to cope with new information. In Piaget's theory, the child actively constructs his or her own understanding of the world, rather than passively receiving it from others.

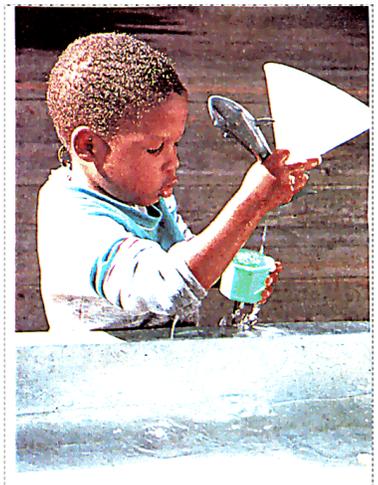
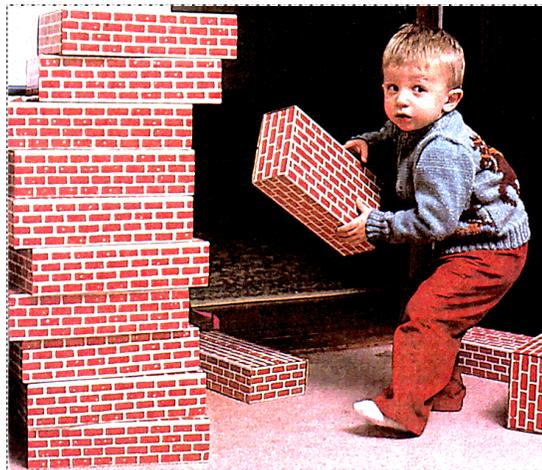
The following example of a child playing with stones in the garden was given by Piaget himself: 'Now to count these pebbles he put them in a row and counted them one, two, three, up to ten. Then he started to count them in the other direction... Once again he found ten. He found this marvellous. So he put them in a circle and counted them that way and found ten once again... He discovered that the sum was independent from the order.'

We see in this example two key features of Piaget's theory: it is clear not only that the child played an active part in reaching an understanding but that the understanding was reached alone.

Piaget emphasized the solitary aspects of learning and development, suggesting that the child needs to interact with the physical world, but he did not emphasize enough the importance of the social world. The importance of the social world was at the centre of the Russian psychologist Lev Vygotsky.

### 18. PIAGET'S IMAGE OF THE CHILD AS AN 'INDEPENDENT LEARNER' OR 'SCIENTIST'

The child plays an active role in her own developmental change by deriving information from the environment:



### 19. NEW INFLUENCE OF LEV VYGOTSKY

Both Piaget and Vygotsky, represent the constructivist theoretical view, according to which knowledge is constructed through processes in which the active participation of the individual is essential. They both emphasized the active nature of child acting on the environment, as opposed to behaviourists emphasizing a

passive nature. Vygotsky generally admired Piaget's work but he argued that Piaget had overlooked the impact of cultural context on development and particularly the role of instruction.

Vygotsky's ideas about the importance of social processes in development, i.e. of the importance of interaction and dialogue, have recently become influential in early years of education.

Vygotsky suggested that babies and young children can communicate with others but do rather little by themselves. It is through interaction and communication that their development proceeds: what was inter-mental (the relationship between persons) becomes intra-mental (internalised by the child). Concepts, language, voluntary attention and memory are functions which have their origins in culture and are acquired by the child through an interpersonal pattern of behaviour that is transformed in an intrapersonal cognitive process. In other words, cognitive functions appear first in an interpersonal process and only then does the child internalize these in an intrapersonal process.

Vygotsky sees the child as having a 'zone of proximal development': a range of achievements which are beyond the child's unassisted grasp, but which are achievable given the help and support. Having learned to do something with another adult or older child, the child then becomes able to do it alone, according to Vygotsky. What matters is not so much what the child could be seen to do on his/her own, but rather, what the child is capable of, when given help.

Therefore, the image of the child by Vygotsky is that of an 'apprentice' in contrast to the Piagetian image of the child as a 'lone scientist' or 'independent learner'.

## **20. CHILD AS AN 'APPRENTICE' – THE NEXT STEP IN DEVELOPMENT IS ACHIEVABLE ONLY WITH THE HELP OF AN ADULT OR A MORE KNOWLEDGABLE CHILD**

Social guidance provides children with the opportunity to participate beyond their own abilities.





Activities practiced socially are internalised by children, thus advancing their own capabilities for problem solving.



Small child learning about basket making from her older sister.

## **21. JEROME BRUNER AND DAVID WOOD – ADULTS BUILD ON CHILD'S SELF INITIATED ACTIVITIES**

Vigotsky's ideas have become known particularly through the works of later psychologists, Jerome Bruner and David Wood.

Bruner was particularly interested in the concept of the 'zone of proximal development'; he uses the metaphor of 'scaffolding' suggesting that adults can 'scaffold' a child's activity and support it in ways which allow the child to go beyond his present level of unassisted performance.

Imagine a tutor has erected scaffolding which could help the child climb to a higher level of understanding. To be more effective, scaffolding has to be constructed so that the child is not asked to climb too much at once. It has to take account not only of the child's existing level but of how far she can progress with help.

The child, like the building, will arrive at, 'stand alone competence' eventually (the adult support can then be removed just as the scaffolding is removed when the building is completed), but only as a result of a good deal of constructive activity.

The crucial word is co-operation: to be most effective, the relationship between teacher and learner must be collaborative.

In a series of studies with preschool children, on the task of constructing complex block pyramids, David Wood and his colleagues have found that when adults sensitively tailored their support of children's efforts according to the children's skill, this helped the children to advance their skills.

This, he called teaching children 'congruently' – that means teaching by making any help given conditional upon the child's understanding of previous levels of instruction, making sure that the child is not left alone when he is overwhelmed by the task but also giving the child greater scope for initiative when he shows signs of success.

## 22. POSITIVE REGULATION AND SETTING LIMITS

From “ICDP handbook for facilitators”, by Karsten Hundeide:

As opposed to negative regulation, “limit-setting” in an atmosphere of friendliness and mutual respect represents positive regulation. Instead of shouting and giving negative commands, there are explanations for why certain things are not allowed and why certain rules or prohibitions are necessary. The rules and consequences of breaking these are agreed on and put in action. When children act correctly they are given recognition. This is what one of the most prominent experts in this field, Martin Hoffman (2000), calls “induction”.

Examples of this with younger children are as follows:

”If you push him again he will fall and start crying”

“You must not hit anybody with what you have in your hand, because it will hurt him a lot – do you remember when a boy in the kindergarten hit you?”

“If you don’t want to share your toys (goodies) with him, he’ll be sad, just as you would be sad if he did not share them with you.”

”Mary was very sad when you pushed her and took her doll”

“He is scared of the dark, so please turn the light back on again”

According to Hoffman, this is the most important difference between good and bad control procedures with regard to limit setting and upbringing of children; that the good procedures create the basis for development of moral understanding, empathy and feeling of responsibility in the child (Hoffman 2000). It is not enough that the child is well disciplined and obedient; it needs to know why its actions are right or wrong, so that its behaviour derives from its moral understanding and responsibility.

The essence of induction, according to Hoffman, is the following: “(...) induction communicates the parent’s disapproval of the child’s asocial action and points out directly or indirectly that his or her action is wrong and that the child has acted wrongly.

Induction does two things which other discipline techniques do not, namely:

a. It directs the child’s attention towards the victims’ suffering or negative experience and makes this clear to the child. Hence it brings in the child’s empathic abilities by activating all his or her empathy-activating mechanisms and thereby brings forward empathic discomfort.

b. Induction also points out the role the child’s actions play in developing this discomfort.

This creates the condition for experiencing empathy-based intense feeling of discomfort and concern for having hurt or created suffering for another person. It is important that this is pointed out and the child made aware, because small children may cry together with the victim without being aware that they actually induced the pain for the victim (Hoffman 2000, p.150-151).

In addition to this, one should also be aware that for the youngest children pointing out what they are not allowed to do may result in focusing their attention towards the negative, i.e. they do not see any other alternatives than those emphasized as prohibited. Hence, such prohibitions (“...not allowed to...”) may be counter-productive by inviting and directing the child’s attention towards the negative and prohibited actions. In such situations, diversion and re-direction of attention towards positive alternatives combined with situational regulation may be an important strategy, especially for small children, but also at higher age level where inactivity and lack of positive alternatives may lead to a cycle of negative actions.

## ABOUT CORPORAL PUNISHMENT

Parental use of corporal punishment is a controversial topic in parent–child relationships that has given rise to much debate and disagreement surrounding the topic.

In 2002, Gershoff produced a review of 88 studies by using meta-analyses to evaluate the outcomes. Link to this review: <http://www.endcorporalpunishment.org/assets/pdfs/reference-documents/Gershoff-research-2002.pdf> . The weight of the available evidence is clearly on the side of the negative effects of customary corporal punishment.

But a quandary remains should corporal punishment be outlawed, like Sweden, Norway and 9 other nations have done?

In some countries, particularly in Africa, Asia but also in USA parents feel entitled to use corporal punishment and it is a deeply embedded child-rearing practice. Rather than legislating change, a more successful long term strategy would be to focus on educating parents about the problems associated with corporal punishment.

Effective education needs to prompt parents to reflect about their use of punishment, to provide them with substitutes to corporal punishment, and to redirect them to a reward-based discipline orientation so they can feel successful in managing their children.

According to research spanking tends to be most frequent when children are 3- to 5-year-old. Corporal punishment is likely to induce one or more particular emotions, i.e. fear, anger, humiliation, sadness. However, very few studies investigated corporal punishment from the child’s perspective (rather than the adult’s) and there is a need for more such studies.

## 23. THE VALUE OF AUTHORITATIVE STYLE OF CHILD-REARING

Baumrind describes an ‘authoritative’ as opposed to an ‘authoritarian’ style of child-rearing and, of course, very different from a ‘laissez-faire’ approach (Baumrind 1971).

Some important characteristics of an **authoritative** attitude are as follows:

- clearly communicates perceptions, attitudes, and reactions
- shows caring but also firm attitudes in child-rearing
- expresses clear norms and values that are considered comprehensible and fair to the children
- supports and affirms the children’s positive behaviour and efforts, and demonstrates clear and predictable reactions to undesirable behaviour
- places demands on children that are adapted to the child’s abilities and development
- allows children to take responsibility for their own experiences as far as their levels of development and situation allow

Children that grow up with these qualities at home, in day-care settings, and at school, grow up to be secure, have a positive self-image, and show maturity and independence as young adults.

## 24. THE IMPORTANCE OF THE HOME ENVIRONMENT FOR EXPERIENCE AND LEARNING

- In studies where the quality of parent-child interaction and relationship improved, the children showed clear signs of progress also in connection with language and other intellectual skills. The studies also show clear connections between a child’s ability to settle in at school and the school results, and the quality of the time he has spent together with his parents. The results of research in this field show that the early interaction between parents and children forms the basis for their ability to make contact, to co-operate, their interest for their surroundings and their feeling of self-confidence and mastery. All these qualities are essential for learning at all age levels.

- Studies also show that it is more permanent qualities of interaction, which are the reason for findings of systematic correspondence between social, emotional and language development as early as the age of three years, and social development and learning at school age.

- In addition to the quality of the early interaction between parents and children, research results also highlight the importance of lasting, positive co-operation between parents and children of school age.

## **25. THE RESEARCH ON STRESS IN NURSERY–CORTISOL LEVEL**

The level of cortisol, a stress-hormone, seems to be a valid indicator of stress. This opened up for new research on children and stress in different settings and under different conditions, like their level of stress in nursery school, during separation, neglect etc. (Sunderland, 2007)

There is a wealth of scientific studies from all over the world showing how early stress can result in enduring negative changes in a child's brain.

Studies of children under five show the cortisol level rising rather than declining during the day in nursery. As soon as the children are back with their parents the level drops dramatically. In one study for 91% of children cortisol level rose at nursery and for 75 % it dropped when they returned home. (Ahnert, 2004, Watermura et al.,2002) Toddlers who played with other children had lower cortisol levels than those who tended to play alone.

Some research indicates that the high levels of cortisol in nursery school over extended period is associated with more aggression and non-compliance in children.(Belsky, 2001). It starts to show at age 2. Findings are particularly significant for babies who had spent 20 hours or more hours per week in nursery during their first year of life.

Research shows that a child is fine if there is emotionally warm one-to-one attention from a familiar figure like a nanny. But it is not enough to give attention to babies only when they show emotional stress. Research revealed that whenever nannies got on with some activity, thinking that the child is fine because it was not crying, the child's cortisol level shot up (Dettling, 2000)

Research also showed that mothers who attend to their children when they cry had children who cried far less than those mothers who left them to cry. ( Bolwby, 1988).

## **26. TO “DISCIPLINE” DOES NOT MEAN TO “PUNISH”**

The term discipline means “to teach”. The most challenging moments that require disciplinary action are the opportunities for deep teaching. Daniel Siegel and Tyna Payne Bryson explain:

In brain terms, our brain has two fundamental modes — reactive or receptive— the key to a discipline interaction is to optimize the chance for learning by moving a child's brain from reactive to receptive. “Reactivity can take many forms such as the classic mild, moderate or intense states of fighting, fleeing, freezing or fainting. In such reactivity, learning will be limited. As Steven Porges suggests, we shut down our social engagement system when we are reactive.”

Connecting first with a child's state of mind is the key to moving reactivity toward receptivity. Remember this with the acronym, PART; for the Presence, Attunement, Resonance and Trust that are the part we play in connecting with others.

Presence is our own state of mind to be curious, open, accepting and loving.

Attunement is how we focus attention on the internal state of another — not just on their outward behavior.

Resonance is how we allow our own internal state to be shaped by what we sense and perceive in someone else — so it's not really mirroring, but it's resonating.

Trust: When the other person recognizes and feels our resonance as it emerges from our attunement and presence, they will begin to develop trust as they turn on their social engagement system.

So when we enact our parental PART, we then connect with our child. Once he or she has moved from reactivity to receptivity, we can then begin the redirecting aspect of discipline, which will be how we teach about the particular issue unfolding at the time. Whether this is about not eating a whole cookie before dinner, not hitting a brother or learning to stop a video game and come to dinner after the second request, connecting first before redirecting will make the learning more likely to occur.

## **27. THE ALLOWING CHILDREN TO EXPERIENCE “SHARP CORNERS”**

Gever Tulley inspires us to think outside our usual parental box of “keeping our children safe” with restrictive rules; he suggests letting them play with pocket knives, spears, fire, old gadgets and even the boundaries of the law. If our children never experience sharp corners, he suggests, we'll be cutting them off from essential opportunities to learn about the world.

Tulley's notion resonates in a fascinating way with modern biology. For our immune system, for example, we need exposure to all sorts of dirt and germs to develop an internal guard that knows “self” from “non-self” and keeps us appropriately safe. And for our nervous system, the more we develop an “extended self” by being actively engaged with objects in the world, the more our brain can develop a sense of how our physical body can safely and effectively move through space. Children need to directly experience the world around them, not just on screens in their laps.

## **28. THE IMPORTANCE OF TOUCH IN EARLY DEVELOPMENT**

Infant massage is a common child-care practice in many parts of the world, especially in Africa and Asia: in Nigeria, Uganda, India, Bali, Fiji, New Guinea, New Zealand (the Maori), Venezuela, and the Soviet Union. In most of these countries, the infant is given a massage with oil following the daily bath and prior sleep time, for the first several months of life.

Very little research has been conducted on the use of infant massage with healthy infants. Nonetheless, the infant massage training groups have anecdotally reported that massage:

- Facilitates the parent-infant bonding process in the development of warm, positive relationships
- Reduces stress responses to painful procedures, such as inoculations
- Reduces the pain associated with teething and constipation
- Reduces colic
- Helps induce sleep
- Makes parents ‘feel good’ while there are massaging their infants
- Several kinds of infants with special needs appear to benefit from infant massage; these include infants who are blind and deaf, who become more aware of their bodies, cerebral palsied and preterm infants.

## **Ashley Montague**

Ashley Montagu was a world-renowned anthropologist and author of many books, including “Touching” which has sold over half a million copies.

*“Where touching begins, there love and humanity also begin – within first minutes following birth”* – from the preface of the third edition of “Touching” (1986).

Montegu’s basic thesis is that touch is adaptive in evolution as a form of social communication that crosses species, cultures, genders and age groups. Without touch there may be growth deprivation, communication failures, aggression and war. It is perplexing in this light, Montegue notes, that touch has been the most neglected sense.

Experts past and present still sometimes advocate minimal touch, (e.g. for the intensive care of neonates) or no touch (e.g. for nursery school children in UK). We just do not touch enough for different reasons; in earlier years experts were worried we would spoil the child, and today experts are worried that children could be abused if teachers were allowed to touch them. On one side of the world, Romanian orphans are attaining half their expected height because of touch deprivation, and on the other side, American teachers are not allowed to touch children for fear of child abuse accusations.

## **The touch research institute**

The Touch Research Institute, located at the University Of Miami School Of Medicine was opened in mid-nineties and it was the first of its kind in the world. The Touch Research Institute has documented the positive effects of massage therapy on the immune systems of HIV men. Following a month of massage therapy, the number of their natural killer cells increased.

## **Stephen Suomi**

Steve Suomi is renowned for his pioneering work in the field of psychoneuroimmunology, using the monkey model. His data suggest that touch has significant critical effects on the immune system.

## **T.Berry Brazelton**

Dr Brazelton developed the world’s most widely used neonatal assessment scale, which made both parents and professionals more aware of the amazing skills of the newborn and the importance of nurturing these skills from the time of birth.

He has also been researching how touch is perceived by the foetus and enhances prenatal learning. Tactile communication not only stimulates the growth of the foetus, but is the primary source of communication with the fetus (i.e. sound vibration and amniotic fluid movements).

## **Michael Leon**

In his research, Dr Leon, one of the world’s most renowned neuroscientists, noted that rats can come to prefer odours not previously preferred simply because the odours are accompanied by touch. The other interesting aspect of this work is the intimate connection between the senses, in this case smell and touch, that appears to be present at least from birth.

## **Massage therapy with preterm infants**

Most of the data on the positive effects of infant massage come from studies on preterm babies. Since the 1970s, a number of investigators have researched the effects of massage therapy on the preterm newborn (Barnard & Bee; 1983; Rausch, 1981; rice, 1975; Solkoff & Matuszak, 1975; White & LaBarba, 1976). Their results have generally been positive. Most investigators reported greater weight gain and better performance on developmental tasks for the preterm infants receiving massage therapy. Interestingly, those

who did not report significant weight gain used a light stroking procedure, which has since been found to be aversive to babies, probably because it is experienced as tickling. Those who showed weight gain experienced more pressure, which probably stimulated both tactile and pressure receptors.

### **Tiffany Field et al. (1986)**

Tiffany Field conducted a study with 20 preterm neonates in which they gave them 45 minutes of massage per day (in doses of 15 minutes period) for 10 days. The massage sessions consisted of three 5-minute phases. During the first and third phases, tactile stimulation was given. The newborn was placed in a prone position and given moderate pressure stroking of the head and face region, neck and shoulders, back, legs and arms for 1 minute each. The middle phase (kinaesthetic) involved flexing of the infant's limbs (moving them into flexion and then extension much like bicycling motions) while the infant was lying on his or her back.

The study yielded a number of interesting findings:

1. The massaged infants gained 47% more weight than the controls with same calorie intake
2. The massaged infants were awake and active a greater percentage of the observation time than the controls.
3. The massaged infants showed better performance on Brazelton Scale on habituation, orientation, motor activity, and regulation of state behaviour.
4. The massaged infants averaged 6 days less in the hospital than the control infants, yielding a cost saving of approximately, \$3000 per infant.

### **Massaging cocaine-exposed preterm infants**

The same type of massage was administered three times daily for a 10-day period. Compared to non-massaged infants, the massaged cocaine-exposed preterm infants:

- Had fewer postnatal complications and exhibited fewer stress behaviours during the 10 day period
- Had a 28% greater daily weight gain
- Demonstrated more mature motor behaviour on the Brazelton exam at the end of the 10 day period (Wheeden, Scafidi, Field, Ironson & Valdeon)

### **Massaging HIV exposed neonates**



Investigations (by Dr Scafidi et al. 1995) showed that compared with non-massaged infants, the massaged infants exhibit:

- Greater weight gain
- Better performance on the orientation and motor clusters of the Brazelton scale
- Better performance on a stress behaviour scale

## Depressed mothers massaging their infants

Tiffany Field et al. (1995) taught depressed mothers to massage their infants to examine the effects of the massage therapy on the infants' disorganised interaction behaviour and their disturbed sleep patterns. They asked each primary caregiver to perform a 15-minute massage daily for a 2-week period. Research result data showed decreased fussiness and more organized sleep patterns in massaged infants.

## Grandparents volunteers as massage therapists

A cost effective way to deliver massage therapy is via 'grandparents' as volunteers who can be trained to do so. In the study conducted by Fields et al. on volunteer grandparents who received massage and were trained to give massage to neglected and abused infants, the results include:

- Increase on drowsiness and quiet sleep
- Increase in alertness and tracking behaviour
- Increased activity, sociability and soothability

As for volunteer grandparents, they reported;

- Less anxiety and fewer depression symptoms and improved mood after receiving massages
- Cortisol levels decreased
- Their lifestyles improved, with more social contacts, fewer trips to doctors, fewer cups of coffee
- They reported improved self-esteem

These data suggest the power of massage therapy not only for infants, but for the adults who massage them, making volunteer infant massage more than just cost effective.

## H.F. Harlow (“Love hunger is stronger than food hunger”)

The history of scientific interest in early tactile stimulation dates back to H.F. Harlow (1958), who first alerted psychology and the rest of the sciences to the importance of touch or what he called 'contact comfort' in his pioneering studies with infant monkeys reared on artificial surrogates. Harlow was able to demonstrate that contact with a terrycloth-covered surrogate 'mother' was more important to the infant than access to a wire 'mother' that provided it with nutrition. In fact, monkey infants would solve the problem of feeding by hanging on to the cloth mother and then briefly leaning over and sipping off the wire mother, and then returning back to the cloth mother. This is illustrated in the photo below: Infant monkey moving from cloth surrogate mother to obtain milk from wire surrogate mother.



In subsequent work, Harlow was able to show that this contact was important not only initially, but also as the infant got older, as it began to use its surrogate as a base for exploration, just like monkeys use real mothers as a base for exploration (Harlow and Zimmerman 1959). Whereas the wire surrogate had none of these characteristics or capabilities, a little bit of contact with a cloth surrogate gave the infant sufficient security for it to be able to explore toys and objects in a strange environment.

This provided much of the basis for Bowlby's early ideas regarding attachment, especially the concept of the secure base (Bowlby 1969).

Harlow's laboratory was also first to show the consequences of having no opportunity for touch in his studies of isolation of infants from their mother from birth onward. The consequences

were devastating.

Having a natural tendency to clasp onto something, and having neither surrogate nor mother to clasp onto, these monkey infants developed patterns of clasping their own bodies. As the monkeys grew older, this contact or subversion of contact with other individuals expressed itself in their not grooming other individuals and in real problems in efforts to reproduce. Even though sexual arousal was evident, these monkeys did not know how to copulate properly. Furthermore, among these females who became pregnant in spite of their sexual deficiencies, the preponderance of mothers did not take care of their offspring. These and other demonstrations of long-term consequences of contact deprivation were profound (Harlow 1971).

These experiments show that the need for a loving relationship (represented, in this case, by the "fur") is stronger than the mere need for food even when hungry. *Thus, love-hunger is stronger than food-hunger.*

## **The importance of body movement**

Drs. William Mason and Gershon Berkson showed the importance of body movement (vestibular-cerebellar stimulation) in mother-infant bonding. Monkeys raised singly in cages in a colony room with stationary cloth mother surrogates were compared to those raised with swinging cloth mother surrogates. The infant monkeys reared on the stationary mother surrogate developed all of the abnormalities which isolation-reared monkeys develop – depression, social withdrawal, aversion to touch, stereotypical rocking and chronic toe and penis sucking, self-mutilation and pathological violence as juveniles and adults.

The infant monkeys reared on the swinging surrogate mother developed normally with only minor stimulus-seeking behaviours, e.g. thumb-sucking. Depression, social withdrawal and avoidance of touch were absent in the swinging mother surrogate reared infant monkeys.

The studies of Mason-Berkson, which can be seen in the 1970 Time Life documentary "Rock a Bye Baby", opened a new door into the brain mechanisms responsible for the pathological emotional-social-sexual behaviours consequent to failed mother love.

There are good reasons why infants and child seek to be carried on the body of their mothers and fathers and love to be rocked to sleep.

## **Harlow and Suomi (1972) – the therapeutic power of touch**

Harlow and Suomi devised a therapeutic intervention for monkeys reared in isolation built on the fact that normal young monkeys have a tendency to cling to their partners. They introduced 3-month old monkey 'therapists', who were still at the clinging stage, to the older isolates. The younger monkeys initiated contact with these isolates, and very quickly, the isolates turned around and began to reciprocate the contact. Eventually the isolate monkeys began actively interacting with the therapists and subsequently showed relatively normal social and emotional development. The therapeutic power of touch was quite evident in these early rehabilitation studies on isolated monkeys, and these data stand to this day.

Contact had another possible therapeutic consequence in these isolated monkeys. Early studies indicated that most females who were reared in isolation and became mothers themselves had problems taking care of their offspring, but Harlow's group indicated that if these females had short periods of contact with an infant, whether they took adequate care of that infant or not, they became perfectly normal mothers with subsequent offspring. That is, a little bit of contact (at least 48 hours) with a first-born offspring, even though it may not have been entirely positive, seemed to prime them so that virtually every one turned out to be a perfectly normal mother toward subsequent offspring. Once again this demonstrates the therapeutic power of touch.

## Marshall Klaus

Dr Klaus and his wife have written a book called 'The Amazing Newborn' and he also produced a film with the same name. He demonstrates the power of touch in labour and delivery.

Studies by Klaus and his colleagues demonstrated the importance of doula-assisted deliveries: women in labour were given continuous emotional support by a caring laywoman that Klaus called childbirth doula (the Greek word 'doula' means 'a woman caregiver of another woman').

All childbirth doulas go through a 2- to 3- week training period to teach them to be able to give the woman in labour and her partner emotional and physical support throughout labour. The doula never leaves the mother during labour. She stays with the mother, touches and holds her, and explains what is going on during labour. She also praises and reassures the mother and gives strong physical and emotional support. She always moves at the mother's pace. The doula frees the father from being the sole support of his wife, with the associated anxiety of that responsibility, and allows him to respond during the labour in a more natural fashion offering emotional support to his wife at his own pace.

Through a one-way mirror, an observer recorded the initial behaviours of mothers with their babies after leaving the delivery room during the first 25 minutes after birth. The observer was blinded to the care mothers received during labour. The doula mothers demonstrated significantly more affectionate interaction with their infants, showing significantly more smiling, talking, and stroking than the mothers who did not have a doula. The doula mothers noted that it took them an average of 2.9 days for them to develop a relationship with their baby compared to 9.8 days for the no doula mothers. Mothers in the doula group were significantly less anxious at 6 weeks; they also scored significantly lower on the depression scale than the control group and exhibited significantly higher levels of self-esteem. At 6 weeks significantly greater proportion of women in the doula group were breast-feeding (51% versus 29%) and demand feeding (81% vs. 47%) with significantly fewer feeding problems in the doula group (16% in doula and 63% in non doula groups).

Of special interest is the fact that more mothers who had a doula felt satisfied with their partners at 6 weeks postpartum and felt that their babies were better than the standard baby; more beautiful, cleverer, and easier to manage than the control mothers.

Data on doula-assisted deliveries and on mothers massaged during labour and delivery suggest that touch significantly reduces anxiety in pregnant women. Reduction in psychological anxiety and its physiological manifestations (cortisol levels) contributes to a better (less stressed) prenatal environment for the foetus.

## Gene Anderson and the Kangaroo method

Gene Anderson has been instrumental in fostering many kinds of touch stimulation for preterm infants. She first promoted stimulation of the mouth by having babies suck on pacifiers which enabled preterm infants to start bottle feeding several days earlier, made them easier to feed, they gained more weight and were discharged from hospital several days earlier than the control group.

She also promoted the skin-to-skin contact otherwise known as the kangaroo-care. With this method, which originated in Bogota, Colombia, the mother holds the infant (who is only wearing a nappy) beneath her clothing skin-to-skin and upright between her breasts or on one breast. Fathers hold their infants skin-to-skin (chest-to-chest) also. Kangaroo care can be practiced in varying degrees. The variations occur along several continua: how soon it begins, how often it is given, how long it is given and how completely it is given. In complete kangaroo care, mother allows self-regulatory access to breastfeeding.

The benefits of kangaroo care have become universally known. Parents become deeply attached to their infants and infants quickly adopt a stress-free expression on their faces. The preterm infants obtain stability of heart rate and respiration through this type of care and steady weight gain is clear; the kangaroo care offers infants a very real potential for growth and development.

Dr Susan Ludington (1989) made one of the most amazing findings related to kangaroo care, a phenomenon termed ‘thermal synchrony’. The infant was given a bottle and started kangaroo care. What she found was the correlation for the first 10 minutes between the infant’s temperature and the mother’s temperature, with both temperatures increasing, first the mother’s and then the infant’s. What was most extraordinary was that when the infant’s temperature reached the thermo neutral range, the mother’s temperature would drop back toward her baseline temperature. If the infant’s temperature stayed up, the mother’s temperature would go all the way down to her baseline, but if the infant’s temperature began to drop, the mother would warm up again, almost like a thermostat.

## **29. EFFECT ON BRAIN DEVELOPMENT OF PSYCHOSOCIAL DEPRIVATION AND ITS REVERSALS**

### **Early adverse experiences: what does the latest brain research tell us?**

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#### **Consequences of early life stress on the developing brain**

Healthy brain development depends on expected input from the environment in order to reach its full genetic potential. For example, it is expected that human infants will have access to patterned light and a range of auditory cues, which support the development of visual and auditory systems. It is also expected that infants will have access to a responsive, stable caregiver, which supports the development of a number of systems, including emotional, cognitive, and physical growth.

Species-atypical violations of these expected experiences have deleterious consequences for brain development. One example involves exposure to chronic stress or excessively threatening stimuli, such as when children are reared in maltreating families or exposed to high levels of violence. Prolonged exposure to threat is associated with the activation of the Hypothalamus Pituitary Adrenal (hpa) axis, a primary stress response system in the body.

Animal work has shown that chronic exposure to glucocorticoids, the end product of the HPA axis, can have adverse effects on regions of the brain that support memory and learning (the hippocampus), and stress regulation, fear response, and detection of threat (the amygdala). Excessive glucocorticoid exposure has been associated with hyperactivation of the amygdala (Lee *et al.*, 1994; Hatalski *et al.*, 1998) and reduced dendritic spines and dendritic arborisation, resulting in eventual apoptosis of neurons in the hippocampus (Sapolsky, 1996; Kim and Yoon, 1998; Brunson *et al.*, 2001; Ivy *et al.*, 2010).

Convergent findings in humans have also been observed in adults with histories of childhood maltreatment (for a review see Hart and Rubia (2012)) and there is some evidence that these neural changes can be observed during childhood (Mehta *et al.*, 2009; Tottenham *et al.*, 2010; McCrory *et al.*, 2013). Human research also suggests that extreme childhood stress leads to alterations in the structural and functional development of portions of the prefrontal cortex, a brain region that supports emotional and cognitive control (Hanson *et al.*, 2010; Edmiston *et al.*, 2011; De Brito *et al.*, 2013). Psychosocial deprivation is a second form of adversity that can negatively interfere with brain development, especially when it occurs early in life.

Childhood exposure to neglect is typically investigated with children reared by neglecting parents in family settings, or at a more extreme level in institutional rearing facilities. Under neglecting circumstances, the brain does not receive adequate environmental input to carry out the normal course of neurodevelopment.

This results in an ‘under-wired’ or ‘mis-wired’ brain, which confers risk for a number of cognitive, emotional and behavioural problems that persist throughout development.

Animal models have shown that exposure to chronically depriving or understimulating environments leads to decreased dendritic arborisation and spines in various regions of the cerebral cortex, and it is also associated with global reductions in brain volume (Diamond *et al.*, 1966; Globus *et al.*, 1973; Bennett *et al.*, 1996).

Parallel findings in humans have also been observed. For example, children reared in depriving circumstances show reductions in overall brain volume (Mehta *et al.*, 2009; Sheridan *et al.*, 2012) and reduced thickness in the cortex (McLaughlin *et al.*, 2014), which may signal atypical trajectories of experience-dependent synaptic pruning.

White matter changes are also observed in children exposed to institutional rearing, both on a global level (Sheridan *et al.*, 2012) and in specific axonal bundles associated with emotional and cognitive control (Elovathingal *et al.*, 2006; Kumar *et al.*, 2014; Bick *et al.*, 2015), suggesting developmental delays in the degree to which neurons become myelinated across development.

### **Potential for recovery**

On a more promising note, the high degree of neural plasticity early in life also allows the brain to be highly sensitive to positive or enriching environments. Therefore, removal from early adversity and entry into a therapeutic context can support recovery.

This has been demonstrated on a cellular level in animal work. More complex environments have been shown to lead to more sophisticated dendritic branching and synaptic density in cortical areas (Altman and Das, 1964; Bennett *et al.*, 1964), and have also been associated with larger brain volumes (Rehkamper *et al.*, 1988).

Human work involving children removed from conditions of extreme neglect has shown similar findings; for example, institutionally reared children placed into enriching, responsive family settings show structural (Sheridan *et al.*, 2012; Bick *et al.*, 2015) and functional (Vanderwert *et al.*, 2010) improvements of the brain, and associated improvements in cognitive and emotional adjustment (Rutter, 1998; Nelson *et al.*, 2007).

For many outcomes, the greatest improvements, both neurally and behaviourally, are typically observed for children who are removed from neglect and provided with enriching environments at the earliest ages (Vanderwert *et al.*, 2010; Rutter, 1998; Nelson *et al.*, 2007).

In summary, there is converging evidence across human and animal studies that early adverse exposure negatively interferes with the developing brain. While excessive exposure to stress may lead to neural alterations due to prolonged exposure to stress hormones, exposure to extreme deprivation may interfere with the brain’s ability to reach its full developmental potential, due to insufficient input.

Animal studies have been critical for understanding the consequences of these adverse experiences on a neuronal level. Human studies showing similar morphological and functional alterations have elucidated the consequences for emotional and cognitive functioning.

Recent evidence points to the potential for recovery, both in terms of brain structure and function, in early intervention contexts. These studies reinforce the notion that prevention, and early intervention that occurs as early as possible, are likely to lead to the healthiest outcomes in the long term.

### 30. INTERPERSONAL INTEGRATION

Daniel Siegal is a clinical professor of psychiatry at the UCLA School of Medicine and executive director of the Mindsight Institute. He is the author of numerous articles, chapters, and the text. His book from 2012, *Developing Mind: How Relationships and the Brain Interact to Shape Who We Are*, introduces the field of interpersonal neurobiology, and has been utilized by a number of clinical and research organizations worldwide. [Interpersonal Neurobiology](#) is an interdisciplinary view of life experience that draws on over a dozen branches of science to create a framework for understanding of our subjective and interpersonal lives. Mindfulness is the psychological process of purposely bringing one's attention to experiences occurring in the present moment without judgment. Siegel's most recent work integrates the theories of Interpersonal Neurobiology with the theories of [Mindfulness](#) Practice and proposes that mindfulness practice is a highly developed process of both inter and intra personal attunement.

Interpersonal integration is one of Daniel Siegal's central ideas, which can also throw light in the context of child development:

Children's development is based on both the information in their genes and the experiences they have in their life. **Genes** contain information that guides the growth of the cells of the body, including the basic cells of the brain, the neurons. How neurons link to each other in synaptic connections shapes the brain's structure. And this synaptic structure shapes how mental processes — like emotions, thoughts, memories and behavioural control — will be created. In this way, our genetic legacy we inherit from both parents shapes, in part, who we become and what our temperament is.

But **experience** also plays a direct role in how the neurons in the brain unfold, therefore also shaping how the mind functions. Experience can be defined as how energy and information stream through our lives — within our nervous system, including the brain, and between ourselves and other people and the larger world around us.

Experience is energy flow. And we now know that all information rides upon patterns of energy flow, like the shapes of these words entering your eye. Photons come from the squiggles that are the words, hit the back of your eye, stimulate firing in your optic nerve, shape firing patterns in your visual cortex and then spread around to the linguistic centers and other regions to help create your experience of reading this entry. All of that is “experience.”

Experience means that neurons are firing and becoming active. And when neurons fire together, they can wire together. The location and the timing of that firing in the brain depends on the type of experience that is unfolding. And neuronal firing can activate genes so that proteins are produced and new connections among the firing neurons are established.

Communication is how we share energy and information flow with each other. How you communicate with your child shapes patterns in your child's brain and therefore can shape how the structure of your child's brain develops. Since relationships are the ways we communicate with each other, this means that relationships not only activate the brain, they shape the anatomical development of brain structure.

After examining tens of thousands of studies, it became clear that a simple principle of healthy living emerged – the principle of integration. Integration is the linkage of differentiated parts of a system. But integration is not the same as blending together and making differences disappear. And integration is not the same as just having different things exist, but not be connected. When we link differentiated parts, we create the integration that enables “the whole to be greater than the sum of its parts.” When a system is integrated, it functions optimally. When a system is not integrated, it tends toward either chaos or rigidity, and sometimes even both at the same time.

But when a system, whether it is a brain or a family, is integrated, it has a sense of harmony; it is the most flexible, adaptive, energized and stable. So, like a river, the central flow of integration is harmony; the two banks are chaos and rigidity. Chaos in a family might be when emotions are exploding out of control or when intrusive memories make it hard to hear what others are saying. Rigidity might be when people feel depleted or demoralized, depressed and lacking in vitality. These examples of chaos or rigidity can last for minutes or hours, and sometimes even days, weeks or months. When they are present, they suggest that the system is not integrated.

For a parent, this view suggests that you can learn how to detect chaos and rigidity in your family and do something to create the differentiation and linkage that will make your family more integrated and harmonious. And over time, the more integration you create in your communication with your child, the more integrated her/his brain will become.

Integrative communication is when you honour differences and promote compassionate linkages. You let go of your fixed, rigid expectations and come to see your child for who he actually is, rather than try to make him only what you want him to be. If he is shy and reserved but you wanted an outgoing social child, you accept him for who he is and support him developing from where he is coming from, not from your disappointment in him. And when integrative communication happens like that, your child will “feel felt” by you, feel understood and accepted, and can become the best him that he can become.

Your accepting his unique qualities and encouraging him to find his own inner strength will cultivate optimal integration in his brain. Optimal integration of the brain means that the different areas of the brain, like left or right or up and down, become linked. This whole brain integration in turn creates optimal self-regulation and your child will develop emotional intelligence, social skills, attentional focus, behavioural flexibility, compassion and creativity.

## Appendix 1:

### Children's early relationships and their significance for their later development

#### N. Armstrong

Babies are born helpless: their survival entirely depends on other people, particularly on the presence and care of their own mother. Since the moment of their birth babies are part of a social system on which they rely for their basic needs for shelter, warmth and food. However, providing for basic needs is not enough – babies do not develop well in situations where attention is paid only to physical care. Many studies (MacVicker Hunt, 1982, Skeels, 1966) in orphanages have shown that in addition to purely physical care there is a need for babies to have opportunities to form long term steady relationships with at least one adult caregiver.

But what are the characteristics of these first relationships that young children form with their mother or other caregiver? And what is the significance of these early relationships for the psychological welfare of children, both in childhood and adult life? This essay will try to explore both these aspects.

There is now a lot of evidence from observational and experimental studies which suggests that even very young babies engage in interpersonal relationships with their primary caregivers which differ from the way they relate to objects. Colwyn Trevarthen and Daniel Stern (Stern, 1985; Trevarthen, 1979) have studied hundreds of examples of mother infant interactions on video and have pointed out the characteristics of the very finely attuned face to face interactions which occur between the two. The mother is capable of tuning in, matching and reflecting the baby's moods in a kind of emotional expressive dialogue. In this dialogue between caregiver and baby reciprocal attunement to each other's emotional state and state of arousal is prominent. The infant generates attractive expressive signals that the sensitive mother responds to in an emotional way with a high-pitch 'motherese' voice, while maintaining eye contact, reciprocating gestures of joy and making approving comments.

In this 'conversation like' activity turn taking takes place between mother and infant but, according to Trevarthen, there are moments when 'mutual action' also takes place. In these 'proto-conversations' both baby's and adult's behaviour is being meshed and the mother subtly fits her behaviour around the baby's. Stern describes this natural ability mothers possess in which the mother follows almost instinctively the infant's emerging moods and initiatives – she does not need to have read a psychology textbook, she just somehow knows that her vocal and facial expressions can be fine tuned to attract the baby's attention, to give a baby growing sense of mastery, excitement and pleasure; somehow, inside she even knows that the baby's capabilities are changing from week to week and so she adjusts her patterns of stimulation accordingly, always aiming for that excitement and pleasure that give her so much of both back in return. "Affective attunement" is Stern's term for this two way process of communicating between mother and baby.

The richness of adult responsiveness provides the infant with opportunities to begin to form, not only a representation of the other, but also a representation of how the infant's own behaviour has meaning in being responded to in consistent ways by the other. There are several studies in which mother child interactions were artificially disrupted in some way or another and from these studies we have evidence that babies are sensitive to the adult responsiveness. In one such study, 'the still face study' (Tronick et al., 1978) babies have shown quite distinctive reactions when their mothers suddenly were asked to make their faces expressionless in face to face interactions with them.

So we can conclude that babies are strongly affected by adult behaviour but it is equally true that babies have impact on their own environment. 'Mothers perpetually over-estimate the element of intent in infant behaviour.' (Hinde 1974). Hinde says, 'what a person thinks about a relationship may be more important than the interaction that actually occurs.' He is referring to mothers universal habit of 'over-interpreting' their babies signals and attaching meanings to these behaviours. And it is to that 'injected meaning' that mothers react, for example by labelling it as 'good', 'bad', 'stubborn', 'smart' and so on. Something is than

built between the baby and the mother together, both playing an active part in it, and the term 'transaction' can be used to express this process, partly driven by the mother's 'over-interpreting' her baby's behaviour and by her behaviour offering a framework of meanings and possible actions which the baby can gradually internalize and make their own. Within the 'transactional model' suggested by Sameroff (1975) development takes place in dynamic interplay of the child and its social context, and the emphasis is placed on the effect of the child on the environment.

Another feature of mother baby communications is imitation by mothers as much as by infants. It is astonishing that even during their first day of life babies are capable of imitating tongue protrusion, lip-widening, mouth-opening and pouting. Interestingly, Pawlby (1977) found that between mothers and their 4 to 10 months old babies mothers did a lot more imitating of their babies than the other way around. In a study by Moran et al. (1978) with one year olds and their mothers, mothers were also found to imitate their babies much more than the babies imitated them.

The work of Trevarthen seems to confirm that babies too, not only mothers are innately sociable. Babies are biased toward human interactions from the beginning, and by three months they have got the hand of nonverbal communication. The first stage of this ability, called 'intersubjectivity' requires only that the baby take delight in face to face interactions. The baby shares herself with the ones closest to her. And she seems to know something about what the other person is thinking or feeling. Even at four months of age the baby can be comforted by tracking the mother's reaction to new events. If, for example, music is suddenly loudly played, the baby may quickly drop her pleasant, playful interaction with the mother and become suddenly wary. But then she will often search the mother's face for clues about how to react. If the mother is smiling and talking warmly and excitedly about the music, the baby will convert the arousal of her wariness into a new burst of pleasure. She may even laugh. But in any case she has found out once again that her mother is a good guide to how to react to her constantly changing world. This according to Trevarthen is 'primary intersubjectivity', with its rudimentary form of 'consultation' with the mother, which at around nine months of age gives way, to what appears to be an *intentional sharing* of experiences. The evidence for this new, or 'secondary intersubjectivity' comes from studies of babies and their mothers not just with each other, but with objects too. In secondary intersubjectivity a deliberately sought sharing of experience about events and things is achieved for the first time. (Trevarthen, 1979). Babies seem to suddenly realise at around nine months that events and objects in the world can be shared in the experience with the adult, they develop 'co-operative awareness'. This means that the relationship between baby and adult can begin to include joint actions, with both their attention jointly directed to things around them.

Psychologist Jerome Bruner describes the way mothers and infants engage in 'joint action' formats and these joint actions form a basis for the development of language. The action becomes a topic of conversation, in which the adult explains what can be done, how to do it etc. and this then constitutes the foundations for the development of true language (Bruner, 1975). Bruner used the term 'scaffolding' to point out another feature prominent in mother or caregiver and child interactions. Scaffolding takes place when the adult intentionally controls some elements in a situation with the child so as to allow the child to make progress and eventually achieve a goal alone, which he otherwise would not have been able to achieve.

The importance of joint actions was first stressed by Vygotsky (Vygotsky, 1962) who proposed that all thought arises first in action between people and only then becomes internalised, what is 'intermental' becomes 'intramental'. Joint activities are part of social interaction at the heart of which lie human relationships, and without relationships psychological development of children could not proceed in the way that it does.

So far we have described some key features of good quality interaction between caregiver and child. But what happens when there is a breakdown in this early relationships? Are there any immediate effects and what are more long term consequences of such breakdowns?

Children who received sensitive care with attuned, responsive adults in the first year of life will become securely attached to their primary caregiver by the time they are two years old. Psychologists seem to

generally agree on the notion that early attunement between caregiver and baby leads to later reciprocal attachment. But how can we know whether babies actually are attached to their caregivers or not? John Bowlby's theory and in particular the experiments known as the 'strange situation' which tested out this theory and were designed by Mary Ainsworth provide us with a mechanism for assessing the quality of children's attachment to their mothers. Observing baby's reactions when separated from their mothers, left with strangers and then reunited with mothers led to the identification of 3 definite patterns, and later a fourth one was added: type A, insecure attachment, anxious/avoidant type; type B, secure attachment pattern; type C, insecure attachment, anxious/ambivalent pattern; and type D, insecure pattern, labelled as disorganized (Cowie, 1994).

Bowlby and Ainsworth claimed that attachment between baby and caregiver was universal biological phenomenon. The attachment of the helpless infant to its caregiver and the caregivers protective responses developed in the course of evolution as a means of survival. The mother provides a 'safe base' (Bowlby, 1969) from which the infant can explore the world, knowing that at any moment he can come back to its safe haven. The presence of the safe base is crucial for the development of secure attachment. When infants are separated from their mothers they suffer from maternal deprivation which according to Bowlby leads to later difficulties.

Studies of adolescents with acute behavioural problems indicated that in their earlier childhood they had often experienced separation from their parents.

Further support for this came from research with rhesus monkeys (Harlow, 1958), which showed that even monkeys reared in isolation from their mothers become disturbed, usually become terrified of other monkeys, aggressive or withdrawn.

Studies in orphanages have confirmed a similar situation to be true of humans too. As Barbara Tizard's studies show (Tizard, 1978) children in institutional care are not given the opportunity to form stable attachments to just one or two adults, and this appears to have consequences for their ability to form relationships in later life.

However, the damage of early maternal deprivation can greatly be reduced, provided babies receive good mothering in time, preferably before the end of their first year. Rutter's work (Rutter, 1985) indicates that there is not a direct link of cause and effect between early separations from parents and later emotional distress. The separation itself does not seem to be the critical factor but rather the critical factor appears to be whether small children received sensitive support through the course of their experiences of separation.

Another critical factor that can be associated with insecure attachment is maternal depression. Lynne Murray (Murray, 1992) investigated the way disturbed behaviour in young children can be related to the mother's depressed mental state. She found that 18 month old infants of mothers who suffered post natal depression were more likely to be assessed as 'insecurely attached' when assessed in the 'strange situation'. However, research in the long term effects is inconclusive.

The relationship of the child and its primary caregiver is developed into an 'internal working model' according to Bowlby (1969) and these models persist throughout life. The internal working model or representation is a cognitive structure which guides the child's actions with the attachment figure based on previous interactions and expectations and emotions linked to these expectations. In the normal pattern of interaction caregiver's are sensitively attuned to the babies' needs and as a consequence babies are securely attached and build an internal working model of their caregivers as available and responsive. But if the caregiver does not provide this basic sense of security infants will be insecurely attached and will develop an internal working model of caregivers who are unavailable or unresponsive to their needs and this has a strong influence on the child's later emotional and social development.

There is some evidence to support the notion that patterns of attachment established in early childhood can have a strong effect on the nature of adult relationships and can even be passed on to the next generation. This was studied by Mary Main (Main, 1984) who devised the Adult Attachment interview (AAI) as a means of finding out the nature of the internal working models of parents to attachment. Four major

patterns of adult attachment are described by this research: *secure-autonomous, dismissing-detached, preoccupied-entangled and unresolved-disorganised*. These patterns are directly linked to the quality of the mother's relationship with her parents but are also closely related to the quality of her relationship with her own child.

Bowlby's attachment theory is one possible way of looking at development which not all psychologists agree with. There are some difficulties with the concept of the internal working model: one could ask, for example, whether the internal model changes as the child is growing up? Or to what extent do other social influences modify the impact or the parent child relationship? According to Stern, a positive relationship with a caring person, at any stage in life, could modify the effect of the internal working model...

## Appendix 2:

### Lev Vygotsky's contribution to the study of children's cognitive development

#### N. Armstrong

Jean Piaget (1896-1980) produced the most comprehensive theory of cognitive development so far. Lev Semeonovich Vygotsky (1896-1934) was an exact contemporary of Piaget, who like him came to psychology from a different area. Piaget was trained as a biologist, Vygotsky began in literature and the theatre. In contrast to Piaget's very long productive career, Vygotsky did only ten years of psychological work before his premature death. But he inspired other Russian psychologists, by many of whom he was regarded as a unique genius. His two outstanding followers are A.Luria (1902-79) and A.N.Leontyev (1904-79). Vygotsky sought to develop a marxist psychology. His ideas developed in the revolutionary fervour of post 1917 Russia and were part of the attempt to create a new society and new sciences consistent with Marxist doctrine. However, soon the revolutionary ferment was followed by a period of repression and stagnation under Stalin who ordained that all psychology was to be based on Pavlov; and only from about 1960 have Vygotsky's ideas re-emerged in what has become known as the cultural history school.

This essay will analyse Vygotsky's ideas by contrasting his theory of cognitive development with that of Jean Piaget and will also try to identify Vygotsky's influence on more recent research.

Both Piaget and Vygotsky represent the constructivist theoretical view. According to constructivist theories knowledge is constructed through processes in which the active participation of the individual is essential. Cognitive processes gradually build up from very simple starting points and qualitatively different modes of behaviour emerge periodically (Das Gupta, 1994).

Vygotsky and Piaget based their theories on quite different assumptions:

Piaget believed that the child's own actions were crucial to development and most of his work concentrates on the important role that individuals play in their own development. The child is seen as an experimenter, making and testing out hypothesis by himself in order to construct an understanding of the world.

Vygotsky generally admired Piaget's work, but he argued that Piaget had overlooked the impact of cultural context on development and particularly the role of instruction. Vygotsky places essential importance on social relationships and cognitive development in his view takes place in the interactions of children with adults or more knowledgeable others.

In contrast, Piaget thought of cognitive development as a spontaneous process in which cognitive structures developed without any direct teaching from adults. Vygotsky agreed with the notion of the 'natural line' in development until 2 years, but then he puts the emphasis on the 'cultural line'.

Vygotsky maintained that although children might develop some concepts on their own through everyday experience, they would fail to develop higher mental faculties, such as capacity for abstract modes of thought without instruction in abstract sign systems. Concepts, language, voluntary attention and memory are functions which have their origins in culture and are acquired by the child through an interpersonal pattern of behaviour that is transformed into an inter-personal process and only then does the child internalize these in an intra-personal process. (Vygotsky, 1988).

The difference between Piaget and Vygotsky can be expressed through their different images of the child; Piaget saw the child as a lone 'experimenter' or a 'little scientist', whereas Vygotsky's image of the child is that of an 'apprentice.'

Piaget's constructivist theory is based on analogies with biological evolution and adaptation, where complex cognitive structures and functions are built up from very simple initial processes in conjunction with personal action on the environment. The child acts on the world and his action on the world reveals external co-ordinations which he progressively internalizes, building up structures and functions or 'mental operations', as Piaget called them.

So, in both the theory of Piaget and of Vygotsky, the child is actively constructing knowledge, however, the Piagetian child is doing this alone, whereas Vygotskian child can only achieve it with the help and support of an adult.

The role of instruction is central in the theory of Vygotsky. Since the main emphasis is on the social context his theory is known as a social constructivist theory.

According to Vygotsky the child has a 'zone of proximal development' which may be described as the difference between what the child can achieve unaided in problem solving and what can be achieved with the help of adults or with a more knowledgeable peer. A simple example is the difference between how an 18-month-old child might attempt to stack a set of beakers when there is no older person there to assist and how she might attempt the same task with the assistance of an adult or older child (Butterworth and Harris, 1994). The main point which Vygotsky is making is to show how the child's knowledge develops with the adult acting as a guide leading the child to more sophisticated solutions to a task.

Vygotsky's work focused on the impact of culture on the child. Influenced by historic materialism, he maintained that human cognitive capacities are determined by human historical development, particularly the technological development. Human beings develop new 'cultural tools' in the course of their history and these tools apart from being technological are also psychological tools, i.e. new ways of organizing, planning, co-operating, calculating. Changes in technological tools affect in turn a change in the psychological tools, and both determine people's cognition.

Vygotsky's theory of cognitive development is a stage theory as Piagetian is too. Piagetian researcher described stage as being more 'a notion of momentary stabilizations of an always moving process'. They have in common the notion that development occurs as a result of continuous and discontinuous changes. Both saw transitions in development resulting from changes in the organisation of mental structures – at different stages of development children have qualitatively distinct ways of thinking, feeling and behaving. Piaget described this development through operations, Vygotsky through reconstructions. Developmental stages according to Vygotsky happen through 'reconstructions' of interpersonal situations which children encounter more than once and each time they can deal with them at a higher level, gaining more and more control.

Piaget described 4 main stages or periods of development, from the sensori-motor stage (from birth to 2 years of age), through the pre-operational (from 2 yrs. to 7 yrs.) and concrete operational (from 7 yrs. to 11 yr.) to the formal operational (from 12 yr. onwards). The sequence of the stages is fixed but what varies is that different people pass through stages at different rates. Development is a slow progression in the construction of self contained operations: in stage 1, co-ordinations develop in senses and muscles as

children physically act on the environment; by stage 2 and 3 children are able to form internal representations, and in stage 4 these representations can be detached from the concrete objects or situations and be mentally flexibly manipulated. The second stage is called pre-operational since children still lack the ability to think logically, their thinking is egocentric, i.e. children can only see their own point of view. Stage three is characterised by the ability to think logically about 'concrete' problems in the here and now, and thought becomes reversible. The stage four gives an ability for abstract or hypothetical reasoning and is acquired by adolescents.

In addition to Piaget's constructivist and Vygotsky's social constructivist views there are two other major theories of development, namely, the behaviourist and the nativist theories. Development by constructivists, is seen fundamentally as a discontinuous process in which new modes of behaviour occasionally emerge, whereas the latter two theories both conceive of development as a linear process of quantitative development, in which the differences between the adult and child experiences are seen merely in terms of quantity of information. In contrast to the active role in the constructivist theories, the child in both the nativist and the behaviourist theories, assumes a passive role.

Behaviourist view is that development is the result of learning, which takes place through imitation or conditioning, and environmental factors and past reinforcements are things which determine learning. The innate factors are crucial to the process of development according to the nativist theorists. Vygotsky agreed with the notion of 'natural' line only up to 2 years of age.

In the 1970s and 1980s there was a shift from the focus on intellectual processes within the individual child, as in the classic research of Piaget, to a concern with social cognition very much influenced by Vygotsky. This shift reflects a move away from attempting to explain cognition as a process located solely within the individual, towards an understanding of the interpersonal context of cognitive growth.

Some contemporary psychologists have questioned the notion of stages in development altogether. They argue that children do not go through any general stages of development, but develop a range of task specific skills and strategies.

More recent theorists in the Vygotskian tradition have further drawn the attention to the importance of context and background when children are asked to learn specific things.

For example, Margaret Donaldson argued that young children fail Piagetian tasks because the chosen tasks make little 'human' sense to them and the children do not grasp what the adults actually mean to be asking them.

Donaldson also pointed out that most thinking is embedded in some context and in the knowledge we already have. Interpreting language is much more than understanding word meanings – people always add something of their own knowledge as well. She illustrated this with the famous story of the robot called Freddy who having been given the task to tidy up all the objects from the table into a big box does so and then tries to put the box into the box, failing to 'make sense' of his instruction. No human would behave like that since we have an urge to make 'human' sense or understand things in relation to the world we live in. (Donaldson, 1987).

Other researchers in Vygotskian tradition over the last decade have demonstrated that when the task and its context are made clear to children, they are capable of logical thought well before the ages Piaget determined as a lower limit.

'Studying child thought apart from the influence of instruction,  
as Piaget did, excludes a very important source of change....'  
(Vygotsky, 1962)

The emphasis of Vygotsky on the importance of instruction and the role of the adult as 'teacher' stimulated major research into the role of teaching in development. The adult role in the 'zone of proximal development' has been demonstrated in a large number of naturalistic as well as experimental settings. Naturalistic studies by Judy Dunn (1988) demonstrated that a great deal can be understood about children's development by studying children's early social experiences in their daily lives.

In the experimental setting Wood, Bruner and Ross (1976) used the term ‘scaffolding’ to describe the adult support through which the child can extend his construction skills to higher levels of competence – as the child makes progress the scaffolding can be slowly removed. Bruner argues, as Vygotsky did, that a child having learnt to do something with another adult then becomes able to do it alone.

The following section will look at Vygotsky’s ideas about the role of language and play in development. Vygotsky and his followers hold the view that language develops in actions between people, i.e. in social interactions of children and adults and peers. Development of language is determined by the one objective – that of communicating. On the other hand, Piaget saw language as a product of a period of development; language appears at the completion of the sensori-motor stage and the beginning of symbolic functions. Vygotsky’s view is the opposite from Piaget, since for Vygotsky thought is to a great extent the product of language and not the other way around.

According to Vygotsky, language is developed in interpersonal dialogues and is internalized to support the development of ‘inner’ speech. This view was elaborated by Vygotsky’s follower Jerome Bruner who pointed out that spoken language has its roots in pre verbal exchanges which have the structure of conversations as well as some underlying similarities such as joint attention to a topic (Bruner 1975).

Vygotsky’s concept of the ‘zpd’ implies that a distinction has to be made between a child’s actual development and his or her potential developmental level. It is interesting that Vygotsky saw play between children as creating a zone in which their performance is in advance of their actual developmental level. According to Vygotsky, play provides a social space where through conversations and other forms of interaction children explore new knowledge and ideas.

‘In play a child always behaves beyond his average age, above his daily behaviour; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form and is itself a major source of development.’ (Vygotsky, 1978).

Vygotsky’s emphasis on social and interactive processes between adults and children are now regarded as of primary importance for learning. This view has replaced the earlier Piagetian one, whereby learning was seen as an essentially solitary process, with children learning meanings and properties of their environments by discovering them for themselves. Nowadays, it is recognized that adults play a crucial role in scaffolding children’s learning.

Symbolic play



## THEORETICAL STUDY GUIDE

Karsten Hundeide's basic manual and papers about the ICDP programme are available from ICDP - some can be found on the ICDP webpage. See also Henning Rye's articles on the icdp webpage <http://www.icdp.info/downloads>

See also "The Importance of caregiver-child interactions for the survival and healthy development of young children" A REVIEW Richter, Linda ISBN 92 4 159134 X (NLM classification: WS 105. 5. C3)  
Published by the World Health Organization (WHO) Department of Child and Adolescent Health and Development - this document can be ordered from WHO

### TOPICS:

Theories about childhood:

- nativist (knowledge is inborn, development is process of maturation)
- behaviourist (parents shape their children's behaviour through positive reinforcements)
- constructivist (J.Piaget – child as 'lone scientist or experimenter')
- social constructivist (L.Vygotsky – 'child as social apprentice')

Nature versus nurture debate about what matters most in child development

Caregivers have their own naïve theories about childrearing - it is how the caregiver sees his/her own role as caregiver. (this is explored in the first component of the ICDP programme)

Baby's astounding early abilities as foundations for learning – discovered by experiments conducted by using modern technology

Discovery of baby's innate social nature and mother's innate ability to respond to the baby (thought to be biologically programmed). Significance of 'proto-conversation'

Experiments with monkeys by R. Hinde and H. Harlow showing the importance of early mother infant bonding for later development

Can the quality of interaction with primary caregiver have an effect on a child's psychosocial development? Proof that it does is provided by studies such as:

H.M.Skeels – a longitudinal study of 25 children raised in an institution, 13 of which were adopted by retarded girls and prospered

McVicker Hunt – study in an orphanage in Iran showing remarkable changes in infants who received more interactive and warm care

See also World Bank analysis of different rates of social return (K.H.'s handbook for facilitators)

'Attunement' in early communication. – D. Stern. 'Affect attunement' a more complex form of imitation of the baby by the caregiver that develops around 8 months, characterized by responding to baby's moods in another modality but reflecting the same feeling as baby's.

Experimental studies in language acquisition by M.Tomasello and M.Farrar showed parents should follow-in to the child's focus of attention and talk about the object of their mutual attention. Other similar experiments confirmed that language development can be enhanced by focusing and talking about what the child is interested in.

The practical application of the concept of following the initiative of the child is exemplified in the work of the Orion Group in Holland who put it at the centre of their therapeutic work with mothers and young children with relationship problems. See: the 'Yes cycle' and the 'No cycle'.

J. Bowlby: Attachment theory and need for 'safe base'; 'good attunement now (of caregiver with the baby in the first year of baby's life) will lead to later attachment'. Measuring attachment – Mary Ainsworth strange situation.

Concept of “mentalization” – research by Peter Fonagy and his collaborators. Mentalization can be defined as keeping one’s own state, desires and goals in mind as one addresses one’s own experience; and keeping another’s state, desires and goals in mind as one interprets his or her behaviour.

Concepts of ‘primary inter-subjectivity’ and ‘secondary inter-subjectivity’ by C.Trevarthen; the developmental spiral: baby has preference for face to face interaction in the early months (primary inter-subjectivity.), followed by interest in playing with objects, and at 8 months develops the ability to combine interest in objects and at the same time seek caregiver’s attention or approval (secondary inter-subjectivity.).

J.Dunn’s sibling rivalry study – demonstrates how parents shape relationships among their children. Read also other studies by Judy Dunn.

Research by R. Plomin – investigator of genes and personality in children found the paradox: identical twins are more alike if raised in different families

Findings about baby’s early expressions of temperament, which are biologically influenced personality traits. There can be a clash of temperaments between mother and baby

Research in 1970s showed that baby’s strongly influence their parents in their relationship. Within the ‘transactional model’ suggested by Sameroff (1975) development takes place in dynamic interplay of the child and its social context, and the emphasis is placed on the effect of the child on the environment.

Problems that arouse when care is just ‘custodial’; i.e. objectification of children in institutions. Zone of empathy: opening and closing. Empathic identification (K.Hundeide)

Value of optimistic positive developmental conceptions as opposed to static, growth non-promoting ideas about childhood, children and care.

How to promote a positive conception in caregivers of their child. (Manual for the ICDP programme)

Exploring different cultural and individual conceptions. (see ICDP questionnaire about caregivers’ conceptions)

Seeing the child as a person. Discovery of one’s own child – practicing empathy. Exercises in the ICDP document: “See your child”

Discuss what constitutes good parenting? D. Baumrind offers an answer with 3 parental styles of communication; authoritarian, permissive (as the worst) and authoritative (as the best)

Importance of touch for the developing child (see relevant sections in this document)

L. Vygotsky’s ideas of the role of adults in the child’s zone of proximal development (ZPD). ‘What is intra-mental becomes inter-mental’ – that which happens between child and adult in their external relationship and communication, becomes internalised by the child. (see appendix 2)

Others have emphasised the importance of the role of adult to guide the child (neo-Vygotsky trend). See concepts of JIE (joint involvement episodes) and the ‘dialogue in action’ which positively influences children’s language development; also concept of ‘scaffolding’ or ‘congruent teaching’ by J. Bruner and D.Wood. Concept ‘guided participation’ by B.Rogoff, with examples from different cultural environments.

R.Feuerstein’s MLE (mediated learning experience) theory also emphasises the guiding role of adult. P.Klein adapted the MLE criteria for working with mothers and young children.

A seven year follow up study by Dr Sally Ward in UK showed how mothers can be taught to talk to their one year old children to develop their cognitive skills; at 7 yrs of age, children in the experimental group were two years ahead in their mental development compared with the children in the control group.

## USEFUL READING

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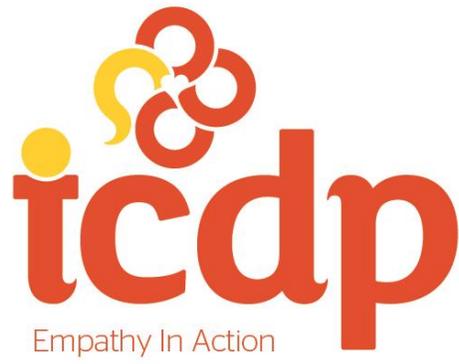
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