THE BOWLBY CENTRE

24th John Bowlby Memorial Conference, 2018
"Shame Matters"
21st & 22nd September, 2018
UCL Institute of Child Health,
30 Guilford Street, London WC1N 1EH

Pride and Shame In Infancy

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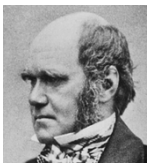
PERCEPTION, MOVEMENT & ACTION RESEARCH CENTRE (PMARC)
INSTITUTE FOR MUSIC IN HUMAN & SOCIAL DEVELOPMENT (IMHSD)

Charles Darwin (1809-1882)



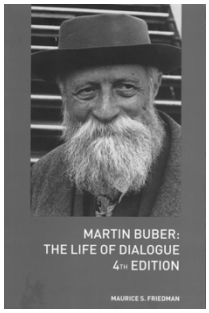
Not only did Darwin propose that the mechanism for expression of different emotional states was innate, but, more controversially, he supposed their perception to be direct: **"An infant understands to a certain extent, and as I believe at a very early period, the meaning or feelings of those who tend him, by the expression of their features"**

(Darwin, 1877 (pp. 293-294))

He proposed that **this development evolved in the service of more effective modes of communication and cooperation, conferring great selective advantage on the human species.**

"Buber singles out the fundamental relational character of human beings. Such relational character is at least two-fold. It can be a third-person relation, an ***I-It*** (and I-She, I-He) or a second-person relation, an ***I-You***. Buber calls them the **two *basic words***."

[Vittorio Gallese (2014) Bodily Selves in Relation: Embodied simulation as second-person perspective on intersubjectivity. Phil. Trans. R. Soc. B 369]



Martin Buber (1878-1965).

Martin Buber's theory of Meaning Making with the child.

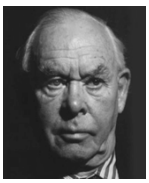
"It is only because the meeting of the **I** and the **Thou** precedes the child's awareness of himself as **I** that he is able to infer the meaning of the actions of others. On the basis of his relationship with others, the child then comes to a knowledge of the external world. … This is the process which Buber has described as the movement of the child from the **I-Thou** to an **I-It** relation with people and things. The child establishes what is 'objective' reality for him through the constant comparison of his perceptions with those of others."

Maurice S. Friedman (2002) *Martin Buber: The Life of Dialogue*, 4th Edition. London and New York: Routledge, pp. 193-194.

René Árpád Spitz (1887-1974)

Inspired by psychoanalytic findings of Freud with adult subjects, Spitz made observations and experiments to identify infant emotions.
He was one of the first to use direct observation with film, to study emotions in both healthy and unhealthy babies. His main scientific contribution showed the effects of maternal and emotional deprivation on infants, which he defined as 'anaclitic depression' or 'hospitalism'. He clarified normal transitions in development, processes of communication, and developmental complexity.

John Bowlby (1907 –1990), a British psychologist, psychiatrist, and psychoanalyst, the pioneer of Attachment Theory, was cared for by a nanny for 4 years after birth, out of contact with his mother. When war began he was evacuated from London to a boarding school at 7. He studied medicine at Cambridge, but chose to be a psychologist, was employed at a school for maladjusted and delinquent children, and gained qualification from the Maudsley as a psychoanalyst. Work with evacuated children confirmed that child thieves had often suffered early separation.



Spitz and **Bowlby,** with the evidence that young infants in hospital will have lasting effects of loss of a mother's affectionate care, transformed Object Relations Theory. Bowlby's Darwinian theory of the infant's innate drive for proximity and emotional attachment to a devoted and dependable mother guided research on emotional development of a person, and the human resources it needs. It opens the way to study of the positive and constructive role of **intimate playful companionship** from birth, of preparation for self-and-relational-awareness before birth, and for a lifetime of learning of conventional meanings and skills in a community.

In the 1960s two discoveries, made by studying films of infants in intimate conversation or inspecting objects, clarified the inborn **cleverness of human beings for cultural learning, for creating 'the meaning of life'**– impulses which medical science and psychology imagined were impossible.

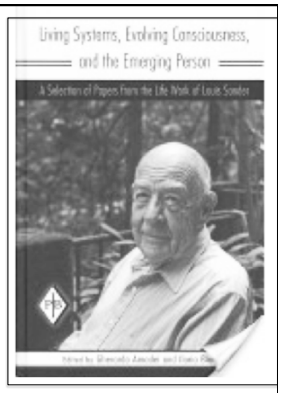
(1) In play with parents, in stories and games, **fun is shared by matching rhythms of infant and adult.**
(2) In a feeling-ful imagination of body movements, or *prospective self-awareness*, **age-related developments in the child's mind guide a life in movement by emotions shared with affectionate companions support creative developments.**

A pediatrician in Boston, **Louis Sander**, made crucial contributions to both these new ideas.

(1) With William Condon, in 1975, Sander confirmed that **neonate hand movements can synchronize with the rhythms of adult speech.**

(2) With Eleanor Pavenstedt, tracing development of communication between mothers with different personalities and self-confidence with their children from birth to age 6 years, Sander showed that **a strong and creative childhood is developed in concert with innate love of a happy mother, who is ready to change with stages of development in the interests and skills of her child.**

Living Systems, Evolving Consciousness, and the Emerging Person:
the life work of
Louis W. Sander



He clarified how emerging knowledge of processes in development, biological systems, and therapeutic change can be integrated as **basic principles that govern the living system**.

(*An interpersonal, relational, psychobiology*)

A FELLOW BOSTON PEDIATRICIAN AGREED

T. Berry Brazelton (1918-2018)

"The old model of thinking of the newborn infant as helpless and ready to be shaped by his environment prevented us from seeing his power as a communicant in the early mother-father-infant interaction. To see the neonate as chaotic or insensitive provided us with the capacity to see ourselves as acting 'on' rather than 'with' him."

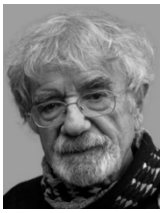
Dr. T Berry Brazelton
1979 Evidence of communication during neonatal behavioural assessment, p. 79.

AND A DOCTOR IN PARIS ADVISED EASY BIRTH

Frédérick Leboyer (1918 –2017), in Paris, was an obstetrician and Famous author. He is best known for his 1974 book, *Birth Without Violence*, on gentle birthing, in particular, the practice of placing newborn infants in a small tub of warm water, known as a "Leboyer bath", to ease the transition to the outside world. He advised low light and quiet in a warm room to limit the shock of birth, and that a newborn be laid on its mother's stomach and allowed to bond, not taken away for tests.

Autopoesis in Consensuality

"..a description always implies an interaction. What we do as observers when we make descriptions is exactly that: We behave in an interlocked manner with other observers in a consensual domain ontogenically generated through our direct (mother-child relation) or indirect (membership in the same society) structural coupling."



Humberto Maturana, biologist and systems theorist

Maturana, H. R. (1978). *Biology of language: The epistemology of reality*.

Humberto Maturana Romesin and Gerden Verden-Zoeller, *The Origin of the Humanness in the Biology of Love*, Imprint Academic, Exceter, 2008

They ask: *Are we genetically aggressive animals that love occassionally, or are we loving animals that cultivate aggression culturally?*

"It is only as loving animals that we can create the conditions for the upbringing of our children in the mother/child relation and, later, in the schools and during their growth into adulthood, in a way that **they grow and conserve themselves as self-respecting socially conscious, loving and caring adults, by living with them in the biology of love**"

"As **languaging animals** that live in conversations, we humans can reflect on our circumstances, and we can invent rational systems in the form of religious, political, philosophical, and economic theories, used to justify our doings **and the negation of our emotions.** During the last ten thousand years, particularly in our occidental culture, we have become alienated from our basic condition of loving animals, and we have begun to live through those theories the rational justification of the systematic and systemic negation of the other (love) **through the defense of transcendental values, and rational or revealed universal truths**."

Iain McGilchrist

The Master and his Emissary, 2012

The most comprehensive review to date of findings from study of differences in consciousness, motives and emotions in the two hemispheres of human beings, and their significance for our understanding of ourselves, and of the modern technical world.

See http://www.iainmcgilchrist.com/

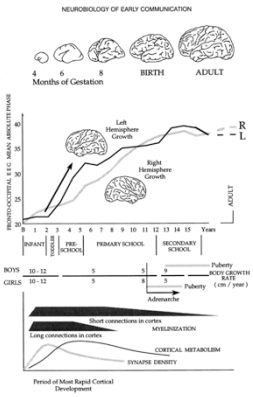
"This book argues that the division of the brain into two hemispheres is essential to human existence, making possible incompatible versions of the world, with quite different priorities and values."

Allan Schore

My work in developmental affective neuroscience indicates attachment transactions shape the connectivity of specifically the early developing right brain, which is dominant for control of *vital functions supporting survival, and for the processing of emotions*

1994

2012



Through gestation and postnatal growth, the left and right hemispheres of the human brain show different periods of growth related to the balance between self-regulation of well-being in the world, and adventurous action to know use its resources, including those for relations with other persons, and for learning cultural skills and language.

ON THE FIRST DAY – EXPECTING CONNECTION

Moments after birth, an infant may look and listen attentively for confirmation of human feelings.

Barbara Gwenn Goodrich
University of Colorado, Denver Veterinary Medicine, Aesthetics, Philosophy of Science

"We Do, Therefore We Think: Time, Motility, and Consciousness"
Reviews in the Neurosciences, 21(5), 331-361 (2010)

"This article is a philosopher's expanded review of two recent books on neurophysiology: **Rodolfo Llinás's *I of the Vortex*** and **György Buszáki's *Rhythms of the Brain***. Researchers such as these are converging on a view of **consciousness as originating in motility and as inherently temporal due to the brainwave oscillations that underlay it.**"

At birth the brain is 1/3 the size of an adult brain, but **has all parts for a creative human life -- unique human face, eyes, voice and hands, for sharing feelings, acts and awareness. They welcome bright, kind company with cousin and grandma**.

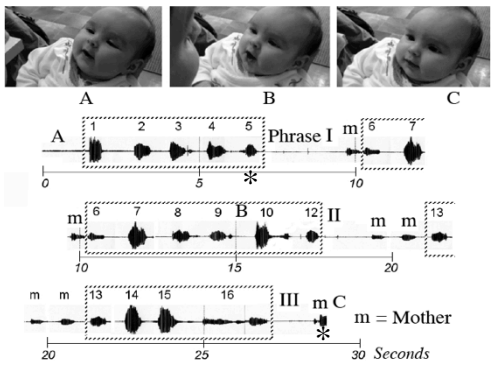
IN EARLY WEEKS A BABY SEEKS INTIMATE CHATS

At 7 weeks this girl is very INTERESTED in communicating.

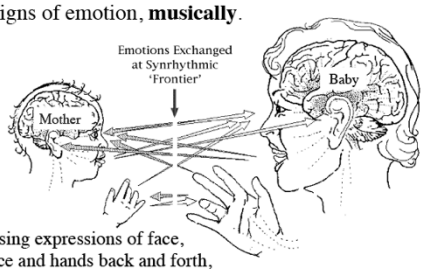
NZ baby, 10 Weeks, 'Telling off ' her mother. With open gaze, a lively face and passionate throat, sharing mind time.

She displays the feelings of her story to
her attentive friend, holding mutual gaze,
expressing adventurous ideas and
passionate feelings with her voice,
face and eyes,
'inventing' the syntax
of informative languaging,
without semantics.

All her mother does is nod her head and
imitate Maria's utterances
with small coos.



SYNRHYTHMIC REGULATION: After birth mother and infant communicate **psychologically**, regulating sympathy by signs of emotion, **musically**.

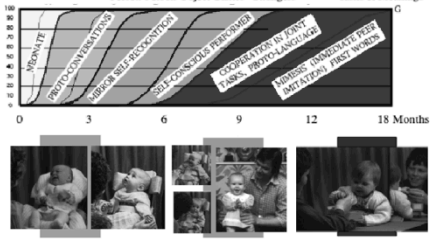


Passing expressions of face,
voice and hands back and forth,
rhythmically, imagining each other, participating in feelings

The Baby is Ready for Stories of Conversation

HOW COMPANIONSHIP DEVELOPS IN INFANCY

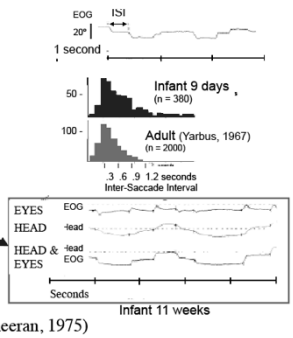
INTIMATE	*INVENTIVE*	*INFORMATIVE INSTRUMENTAL*
LOVE	PLAY	WORK
PRIMARY INTERSUBJECTIVITY	GAMES & JOKES	SELF-CONSCIOUS SHOWING OFF	SECONDARY INTERSUBJECTIVITY
Proto-Conversations	Person-Person Games to Person-Person-Object Games	Fear of Strangers	Companionship in Tasks & Meanings



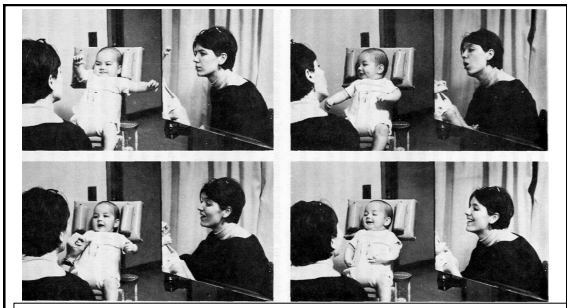
THE BEGINNINGS OF MY STORY

Center for Cognitive Studies
Harvard, 1967

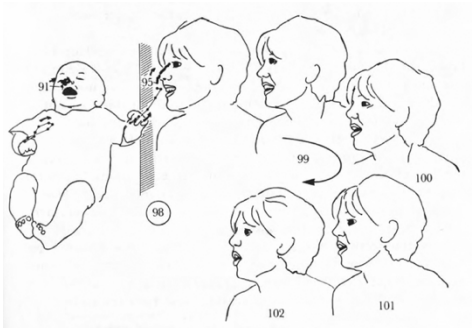
RHYTHMS OF SCANNING & TRACKING BY MOVING EYES



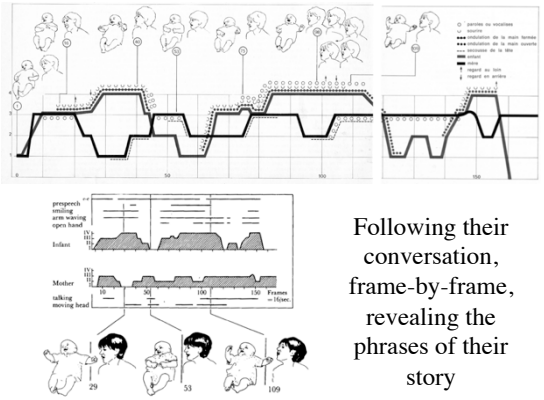
(Trevarthen, Hubley and Sheeran, 1975)



A mother and 9-week-old boy. The infant leads the dialogue with body and voice. The mother imitates.
Harvard Center for Cognitive Studies, 1967, with Jerome Bruner, Berry Brazelton and Martin Richards.



Jody's mother 'echoes' his expressions with a delay of 0.25 secondes



Following their conversation, frame-by-frame, revealing the phrases of their story

THE DISCOVERER OF PROTO-CONVERSATION

Mary Catherine Bateson (1979):
"Observations from films of an infant 7 to 14 weeks old with the mother. "… the mother and infant were collaborating … the mother speaking brief sentences and the infant responding with coos and murmurs, together producing a brief joint performance similar to conversation, which I called 'proto conversation' These interactions were characterized by a sort of ***delighted, ritualized courtesy and more or less sustained attention and mutual gaze***."

Bateson concluded,

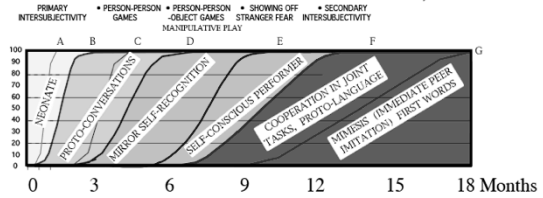
"**The development of the capacity for participation in complex sequenced behavior** must lay the groundwork for participation in **games** and for the development of **playful patterns of imitations**, and so the study of such performances can shed light on a variety of types of learning, including **language** acquisition."

Age-Related Changes

I -- IMITATIONS OF EXPERIENCE
IN RHYTHM OF DIALOGUE
WITH THE NEWBORN

Self-and-Other Awareness
with innate expressive movements
and their prospective sensibilities
for sharing purposes, and interests
with subtle feelings,
of aesthetic self-satisfaction
and moral sympathy

THE ROOTS OF HUMAN CLEVERNESS, AT BIRTH



THE NEWBORN HAS 'KNOWLEDGE'
OF THE HUMAN SELF-IN-MOVEMENT
Hand active with Visual Fixation,
Two Eyes Accommodated for Shared Foveal Fixation
Looking at Other's Eyes, Face or Hands
Ready to get to grips with the world,
and with other human minds.

THE BEGINNING OF MOTOR INTELLIGENCE

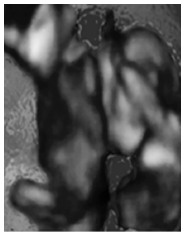
A mid-gestation foetus puts thumb in mouth, or makes gestures of conversation ***with purposeful grace.***

Eyes open soon – but there will be little to see. Hearing listens for the mother's voice. Soon will come a smile, or a pout of disgust, ***emotions.***

The cerebral cortex is silent, but beneath is a human spirit, wanting ***to share graciousness in movement***.

Dr Nadja Reissland from Durham University who has researched scans of unborn babies whose mothers smoke, and found expressions of distress. She has also observed that the foetus of a mother who is depressed shows self-touching comfort gestures by the left hand.

OTHER-AWARENESS IN MOVEMENT
A Foetus Touches a Twin With Care



Castiello U, Becchio C, Zoia S, Nelini C, Sartori L, Blason L, et al. (2010). Wired to be social: The ontogeny of human interaction. *PLoS ONE*, 5(10): e13199.

doi:10.1371/journal.pone.0013199

20 minutes old, and eagerly tracking a ball *moved by a nurse*. The world is to grasp, *and it communicates*.

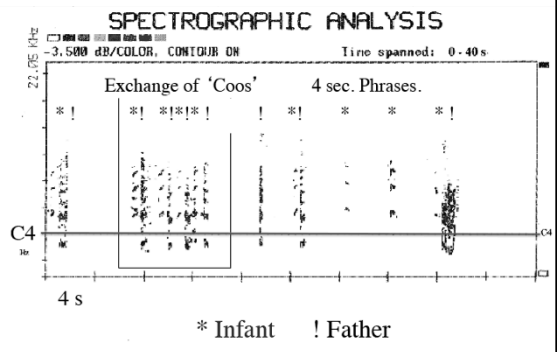
Young awake infants are visibly active mentally -- thinking and 'talking' with 'mimesis'.

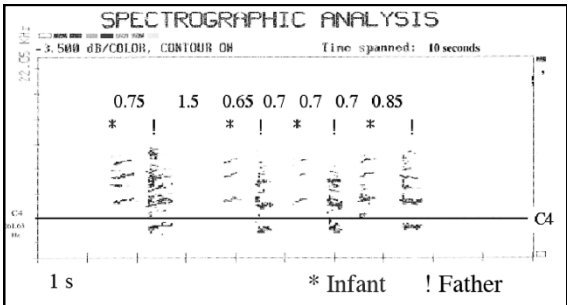
They show **gestures of the hands** relating to **feelings** in their bodies, to orientation of their **interest** to events in the world, and to the **sympathy** they have for of other persons who may respond to their signs, thinking with them.

Infant hand gestures are part of a rich display of expressions by posture and attitude of the head and eyes, and intricate movements of the face.

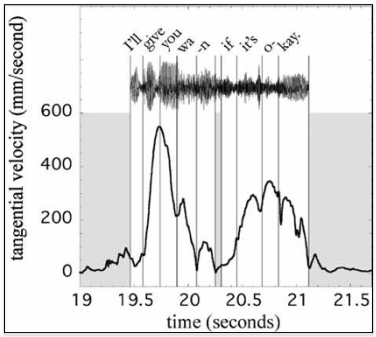
Naseera, born 3 months early, kangarooing with father at 32 weeks. They share a conversation.

SYLLABLES AND PHRASES BEFORE WORDS





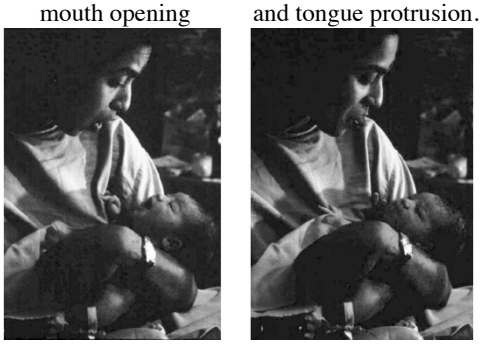
The rhythm of sounds is very regular, near 0.7 seconds (*andante*), until the last, when the father comes in late. Each interval corresponds to a *syllable*, and the group (c. 4 seconds) approximates a *phrase* in speaking. The last interval corresponds to the normal increase in duration of the last syllable in a spoken phrase *("final lengthening").*



A newborn baby's arm movements synchronize with the syllables of adult speech

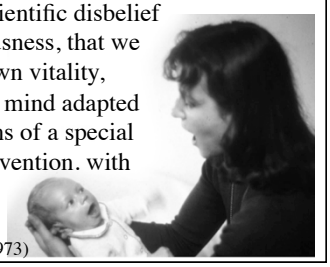
Condon, W. S. and Sander, L. S. (1974). Neonate movement is synchronized with adult speech: Interactional participation and language acquisition. *Science*, 183, 99-101. .

At 30 mins. old, Shamini imitates
mouth opening and tongue protrusion.



Other's actions are for copying, to share meaning.

Sharing the life mouth-to-mouth: A baby of one month responds with pleasure to **Olga Maratos** who is attentive and supportive. They both understand the message. In the early 1970s, Olga shared the ability of young children to move with awareness. She proved, at a time of scientific disbelief in the babies' consciousness, that we are born feeling our own vitality, and with the body and mind adapted to share the expressions of a special human vivacity and invention. with loving companions.



(Olga presented her thesis in Geneva to Jean Piaget in 1973)

Giannis Kugiumutzakis

Professor of Developmental Psychology and Epistemology of Psychology, Department of Philosophy and Social Studies, University of Crete, Greece.

He shares a cycle of imitations of Mouth Opening over 11.3 sec., with a female infant 20 minutes after birth. Recorded a maternity hospital in Herakleion, Crete in 1983 for his PhD research with Olga, in Uppsala.

Kugiumutzakis, G. (J. E.) (1985) *The Origins, Development and Function of Early Infant Imitation*. Uppsala University, Ph D Thesis (Acta Universitatis Uppsaliensis, 35). Uppsala: University of Uppsala.

Mikael Heimann, a Swedish Psychologist, now Professor at Linköping University, began pioneering work on development and functions of imitation in infants with a doctoral thesis at Pennsylvania State University completed in 1988. **He has studied changes in the distribution of the infant's attention to the mother's expressions and to the surrounding world and individual differences between these, including the effects of autism**. His publications over 30 years chart actions of meaning before speech.

Publications of Mikael Heimann on **the biological, psychological and cultural factors that affect the motives for imitation of facial expressions in infancy**. From this work he concludes, "There is no specific imitation module located anywhere in the brain." (Heimann, 1998, p. 104).

Heimann, M. (1989) Neonatal imitation, gaze aversion, and mother-infant interaction. *Infant Behaviour and Development, 12*, 495-505.

Heimann, M. (1991) Neonatal imitation: A social and biological phenomenon. In T. Archer and S. Hansen (Eds.), *Behavioral Biology: The Neuroendocrine Axis*, (pp. 173-186). Hillsdale, NJ: Erlbaum.

Heimann, M. (1998) Imitation in neonates, in older infants and in children with autism: Feedback to theory. In S. Bråten (Ed.), *Intersubjective Communication and Emotion in Early Ontogeny*, (pp. 89-104). Cambridge: Cambridge University Press.

Emese Nagy
Reader in Psychology, University of Dundee, Dundee, Scotland, Psychologist and physician, researching the psychology of the neonates, foetuses and children with autism.

She demonstrated that newborns imitate Face expressions and hand gestures **with the intention to take part in a dialogue,** to share emotional appraisal of **the quality of the engagement with a responsive partner**.

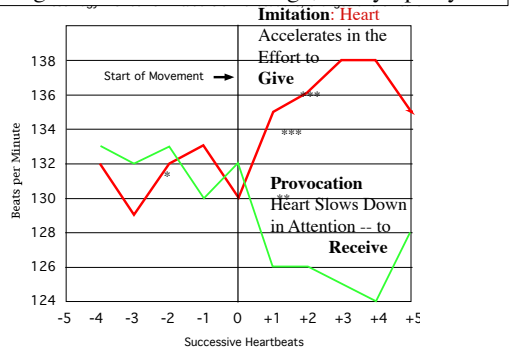
WHY DO BABIES IMITATE?

What Emese found when she waited, politely, inviting the baby to take a turn.

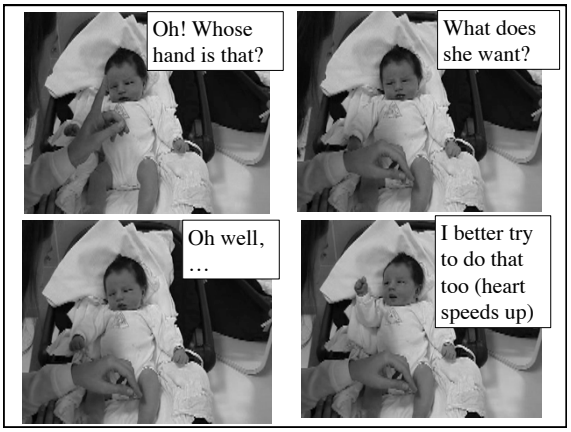
"Searching for the mechanism of neonatal imitation resulted in the discovery of a ***neonatal initiative capacity***, which I and Peter Molnár called ***'provocation'***. Newborns spontaneously produced previously imitated gestures while waiting for the experimenter's response."

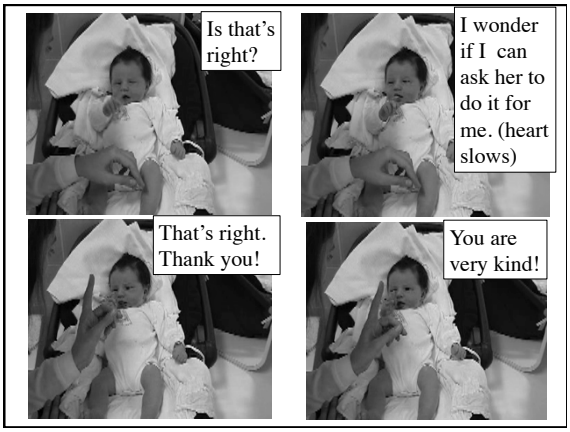
Nagy E, Molnár P (2004) *Homo imitans* or *Homo provocans*?: Human imprinting model of neonatal imitation. **Infant Behavior and Development 27**, 54–63

Different Heart Beats in Imitation and Provocation Signs of Emotional Exchange, or 'Sympathy'



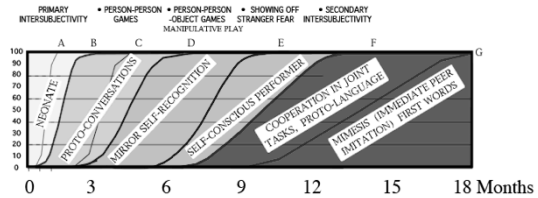
15 sec. dialogue with a baby less than 2 days old





II --ELABORATION OF THE STORY
IN PROTO-CONVERSATIONS
AT 2 MONTHS.

Primary Inter-subjectivity
Mutual regulation of 'chat'.
Sharing emotions, and protecting relationships, with
rhythms, tones and poetry of
Communicative Musicality



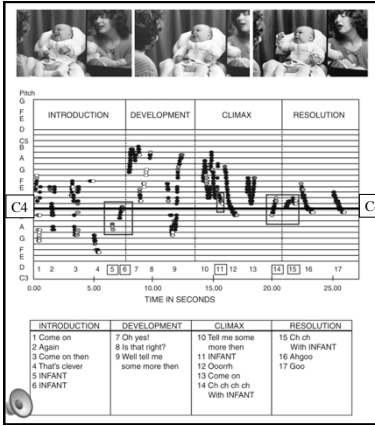
TWO TO FOUR MONTHS
Clever at Dialogue
Accurate reach to touch.
Stereo acuity, precision seeing in 3D
Eye-head-arm coordination
Shifting attention. Looking away.
Right arm gestures (girls first).

We tell one another our intentions, interests and feelings from birth, by **moving in sympathy** -- creating stories of life with people we love. **The Prosser Family in Edinburgh, 1979**

Laura, at 6 weeks, starts to chat with her Mother, **Kay**, at Edinburgh University. She pays attention.

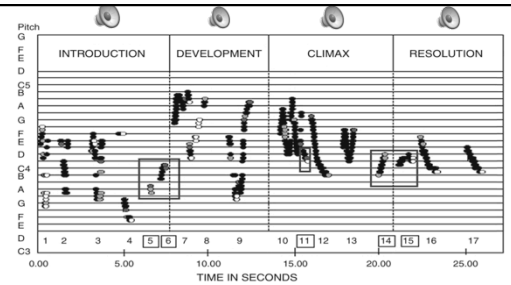
Laura's conversation with her mother was analysed by musician and acoustics expert **Stephen Malloch**. He measured the sound of their vocalizations in *spectrographs* and *pitch plots*. With film we correlated these vocal expressions of emotion with gestures of head, face and hands.

Laura was a gifted partner with her mother.



INTRODUCTION	DEVELOPMENT	CLIMAX	RESOLUTION
1 Come on 2 Again 3 Come on then 4 That's clever 5 INFANT 6 INFANT	7 Oh yes! 8 Is that right? 9 Well tell me some more then	10 Tell me some more then 11 INFANT 12 Ooorrh 13 Come on 14 Ch ch ch ch With INFANT	15 Ch ch With INFANT 16 Ahgoo 17 Goo

A wave of vocal energy carries the narrative in phases of a drama which is composed by Laura and her mother sharing the pulse and the melodic tones through an octave above Middle C (C4)



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COMMUNICATIVE MUSICALITY
(Malloch, 1999)

The sense of 'musicality' comprises:

(1) **PULSE**: A rhythmic time sense (syllables, the beat, phrases and longer elements);

(2) **QUALITY**: Sensitivity for the temporal variation in intensity, pitch and timbre of voices and of instruments that mimic the human voice;

(3) **NARRATIVE**: Perception of the emotional development of the melodic line, in anticipation of repeating harmonies, phrases and emotional forms in the vocal or musical performance.


Helen Cordero "The Story-Teller"

Communicative Musicality
Exploring the Basis of Human Companionship

Stephen Malloch and Colwyn Trevarthen

Oxford University Press, 2009
Paperback 2010

Narrative

- Pulse and Quality are combined in the forms of emotional narrative, **which allow two persons to share a sense of purpose in passing time**.
- We examine the musical companionship that is created with her baby as a mother shares a protoconversation or chants a nursery rhyme.
- We conclude that Communicative Musicality is vital for companionable communication between mother and infant.

Stephen Malloch (1999).

The musical story becomes a life story.

Thirty Years Later in Vancouver – Laura now says "Ah Goo" to her baby; has she learned nothing?

WHEN THE RHYTHMS OF VITALITY ARE NOT SHARED, JOYFUL INTIMACY BECOMES DISTRESS

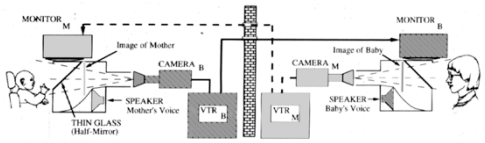
Babies detect when the rhythm is wrong. They express their sadness at loss of 'contingency' -- when 'out of touch' in the dance.

Researches of Prof. **Lynne Murray** at Reading University, and Dr. **Maya Gratier** in Paris, have explored how the mother-infant dyad is affected when interpersonal timing is disturbed, experimentally, or by illness.

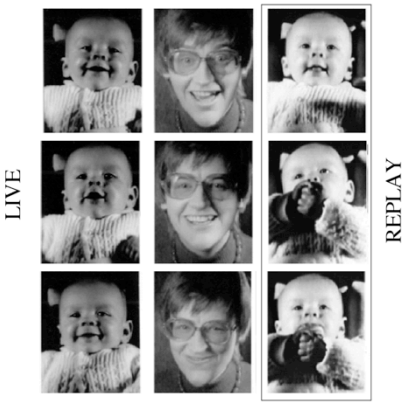
LYNNE MURRAY Professor in Developmental Psychopathology, University of Reading.

Lynne studies child and adolescent psycho-pathology, and its prevention and treatment. She has studied the dimensions of maternal communication that infants respond to, and effects of postnatal depression on child development, from infancy until the age of 23 years. Now she is looking at mothers with anxiety disorder and their children. She has also investigated effects of treatment for postnatal depression, both in the UK and the developing world.

EXPERIMENTING WITH EMOTIONS OF CONNECTION
Lynne Murray's Double Television Test
of the inter-synchrony of dialogue, 1975-1980



Baby Shona, 8 Weeks, in one Room,
Her Mother in Another
They See, and Hear, Each Other on Television
and communicate with attunement.



The happy minute of Shona's mother is replayed.

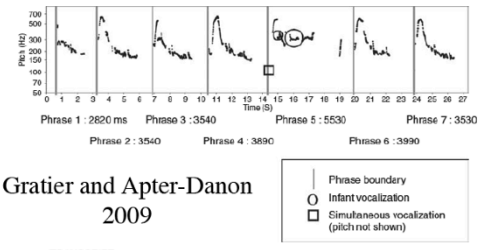
Shona is withdrawn, and sad when mother is just a *'non-contingent'* recording.

. LIVE - PROUD
In communication

REPLAY – ASHAMED
Out of touch. Avoidant.

MAYA GRATIER Maître de Conférences, Université Paris Ouest Nanterre La Défense

My principal area of research is vocal communication between mothers and infants in the first 6 months of life –the temporal coordination and prosody of mother and infant vocalisation in typically developing populations and those at risk such as with mothers diagnosed with personality disorder and infants later diagnosed with autism. I also work on musical and gestural communication between improvising musicians.



Gratier and Apter-Danon 2009

27 seconds of vocal interaction of a mother with Borderline Spectrum Disorder and her 3-month-old. Duration of monotonously repeated phrase, "Bonjour petit bonhomme", shown in milliseconds.

THE BEGINNING OF RITUAL FUN

After 3 months, a baby is becoming stronger, more curious, eager to look at surroundings, and to grasp and manipulate things.

There is a growing tension between doing something for oneself, or sharing with others -- and this makes for **self-consciousness, teasing and fun, and invention of games**. (This is why the infant begins to find mirrors interesting -- they tease expectations of communication)

III - 4 to 8 months, PLAY

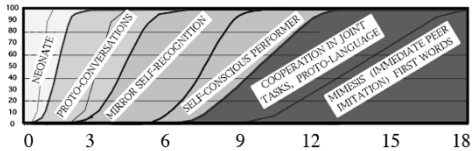
PLAYING GAMES - SHARING MUSICAL STORIES OF MOVEMENT AS RITUALS TO CELEBRATE ***COMPANIONSHIP*** WHICH IS VALUED BY JOY, AND BY MORAL EMOTIONS OF ***PRIDE*** AND ***SHAME***

Person-Person Games and Songs.

Person-Person-Object Games and Tasks

GAMES & JOKES SELF-CONSCIOUS SHOWING OFF

Person-Person Games to Games with Objects Fear of Strangers



FOUR TO EIGHT MONTHS
A more lively, interested person!

Crawling, Sitting, Pulling Up to Stand.

Grasping and Holding Objects.

Babbling, Looking at Mother's Hands

Leanne, 4 months: Enjoying a song. Reaching for a ball.

Looking about. Ignoring mother

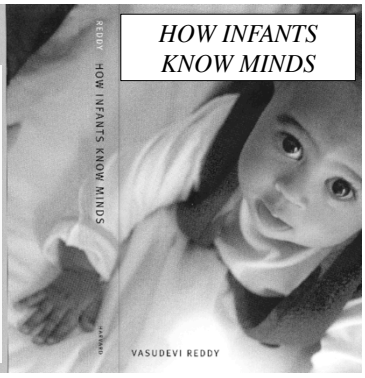
"If it's your foot you want, here!"

‘SELF-CONSCIOUSNESS’ AT 3 MONTHS

Vasudevi Reddy’s study of babies’ ‘coyness’ in front of the mirror, which inspired her interest in ‘other awareness’.

Harvard University Press 2008

“There are precious ideas here, well worth sharing with behavioral science, philosophy, anthropology and related disciplines.”
Jerome Bruner



Vasu Reddy’s book, on ‘Second Person Psychology’

BUILDING ARTFUL ‘PROTO-HABITUS’

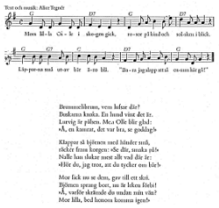
Research on **songs for infants** in many languages shows how we share **story-telling** beyond the spoken word – enjoying the companionhip of body impulses.

Songs and action games, chants and poems are quickly learned and remembered.

They become favourite messages of friendship, **emblems of the infant’s identity or membership of a group, a source of pride to be shared with admirers**.

A FAMOUS SWEDISH SONG BY ALICE TEGNER TELLS A MOVING STORY

Mors lilla Olle



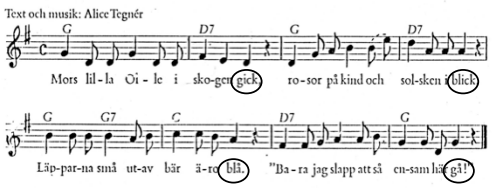
Mother’s little Olle meets a bear in the forest and feeds him blueberries

A Swedish Mother Sings to Her Blind Daughter

The baby ‘conducts’ the melody sensitively with her left hand, which she has never seen.

The Rhythms and Tones of the first verse of a Story. Sounds of feeling inviting sympathy with rhyming vowels. (Swedish has more vowels than English)

Mors lilla Olle



CHILDREN ARE BORN MUSICAL

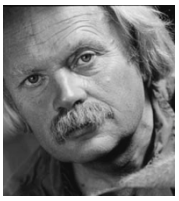
Without training in conventions of composition or skills of performance they have the sensibilities of an adult musician.

They move in rhythmical ways and explore the tones and melodies of their voice, imitating the intonations and narratives of other persons' expressions long before being able to talk.

And they love to perform for the attention and affective appraisal of others.

This 'communicative musicality', is foundation for the learning of many stories of human interest besides music.

Jon-Roar Bjørkvold,
Prof. of Musicology,
University of Oslo



"We all need this Muse Within, for we are what I shall call *muse-ical beings*. To lose our *museicality* would be to lose a profoundly essential part of our humanity." (p. xviii)

a will to survive
a power to grow
a musicality to move
an urge to play
a courage to create

Trevarthen, C. and Bjørkvold , J.-R. (2016) Life for Learning: How a young child seeks joy with companions in a meaningful world .

A FAMOUS BABY SONG,
A STORY IN MELODY OF MOVING

Rock-a-bye baby
on the tree **top**.

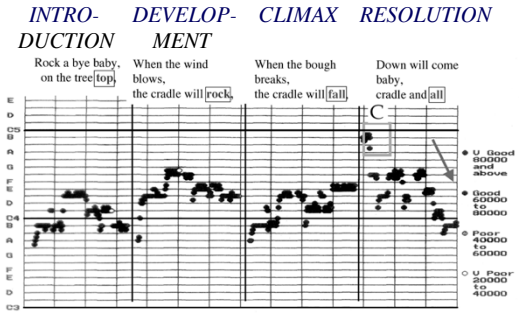
When the wind blows
the cradle will **rock**.

When the bough breaks
the cradle will **fall.**

Down will come baby
cradle and **all.**

There are rhyming vowels that the babies remember, and may imitate

THE FOUR COMPONENTS IN THE NARRATIVE



THE MELODIC STORY OF A BABY DRAMA
From the climax, C, the tone drops to the ending

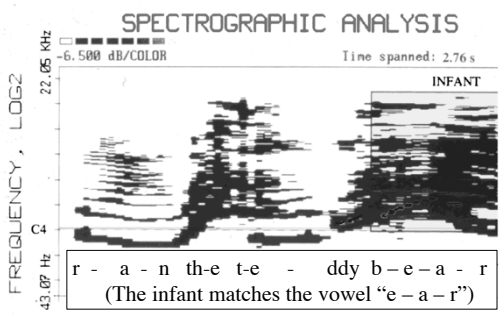
A FAVOURITE ACTION SONG

(With an assertive mother)

Round and round the gar-den,
Ran a ted-dy **bear**,
One step, two step,
Tic-kl-y un-der **there**.

Leanne, 5 months. “Round and round the garden”, shared with *Interest* and *Pleasure*.

SHARING FEELING IN THE SOUND OF SINGING BY MATCHING THE VOWEL



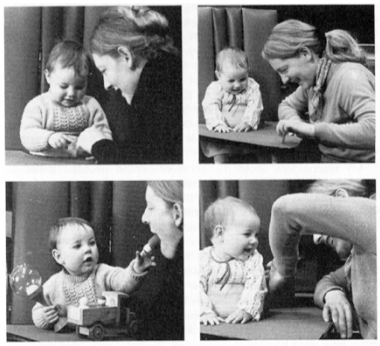
r - a - n th-e t-e - ddy b – e – a - r
(The infant matches the vowel “e – a – r”)

Clappa, clappa handies,
Mommy’s at the **well**,
Daddy’s away to Hamilton,
To buy wee Megan a **bell**.

ANOTHER FAVOURITE ACTION SONG

Emma responds to “Clap Handies”
(She is left-handed).

GIRLS 7 AND 8 MONTHS, TEASING GAMES WITH MOTHER



Left: Touching finger tips, feeding wooden doll to mother, with sympathetic open mouth.

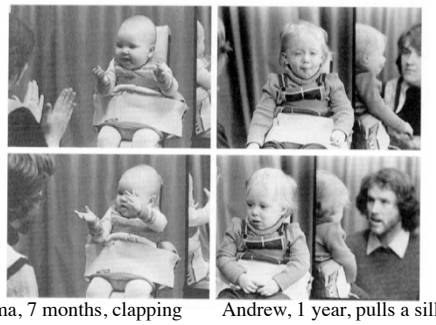
Right: A different “'Round and round the garden”; mother creeps to her over the table, then tickles her under the arm.

CLEVER JOKES AT NINE MONTHS

Esme shares a 'wrinkle nose' joke with her mother.

Andrew chases a ping-pong ball.
Alex pokes his tongue out to the mirror after his mother asks him to imitate.

SUBTLE MOODS OF SELF-OTHER AWARENESS



Emma, 7 months, clapping with mother; and bravely offers it to a puzzled stranger.

Andrew, 1 year, pulls a silly face as his mother is 'blank-faced'; he looks at a stranger, then cries.

Emma, 6 months, on father's knee.

Her mother says, "Clap handies!"

Emma 'shows' or 'performs' to the photographer, with intent look and a proud grin. (Father is proud too)

All smile with the emotion of PRIDE in others' admiration

But, With a Stranger Emma is worried and *'Ashamed'*. He does not 'get it' when she shows her clapping.

So she claps to herself.

Even a nice stranger is hard for to bear at 10 months.

SHAME
Escaping
Mis-understanding
With a Stranger,
Hiding Confusion.
Emma
at 6 Months

Infants sense strangers do not share their understanding, and this worries them. It is not fear but confusion – an *anxiety of meaninglessness*.

Such feelings make teaching of ideas and skills a moral task. *Shame and anxiety stop learning*.

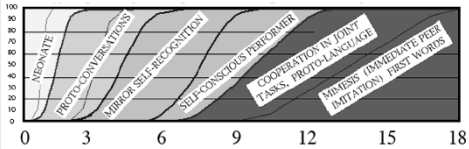
IV -- SHARING INTENTIONS AT ONE YEAR

HOW A 'COMMON SENSE' OF MEANING GROWS.

To Share a Task
The beginning of cooperative awareness and acts of meaning or
'Secondary Intersubjectivity'

Discovered by Penny Hubley in 1974 with a simple task, **"Put the dolls in the truck"**

SECONDARY INTERSUBJECTIVITY
Companionship in Tasks & Meanings



9 TO 18 MONTHS
Attention to Others' Interests. Combining Intentions. Sharing Meanings & Rituals
New 'Self Importance'

"Master Baby" by Sir William Orchardson, Scottish National Gallery. One-year-old with her mother. A Person-Person-Object Game.

'Secondary Intersubjectivity' or Sharing Tasks

At about 9 months important advances occur in sharing 'human sense'.

The baby's increased interest in what other people are doing and the things they use leads to following directives, trying to make conventional messages or to use objects 'properly' -- in the approved 'ritual' way.

This is vital preparation for learning language to name meanings as conventions of cultural 'common sense'.

BEFORE 9 MONTHS
TWO ATTENTIONS
"Put the man in the truck!"
Emma, 7 months, is bright, but she doesn't get her mother's message.
She is too young to share the purpose of a task.
"Don't chew it. Put it in there!"

For Basilie, 12 months, it is easy and amusing.

"Here, put this one in the truck!"

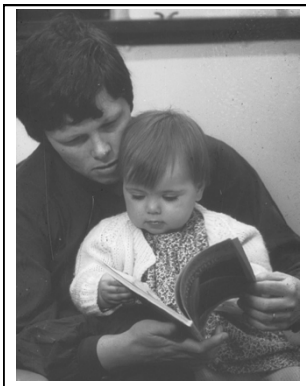
No problem!

"Oh, what a clever girl!" (Yes I am good, aren't I)

IMPERATIVE, SELF-ASSERTING COMMUNICATION CHALLENGING RESPONSIBITY IN A SHARED TASK

Basilie, at one year, insists that her mother must put the doll in the truck, while her mother points to the truck saying, with emphasis, "You're meant to put it in!"

Basilie at One Year Is a Clown,
As Well as a Proud Companion in Work.



Sharing makes it meaningful

In the waiting room Basilie pointed and vocalised a 'protolanguage' request for the magazine.
Her mother said, "Oh, she recognizes the *National Geographic* by its yellow cover, and likes to look at the pictures."

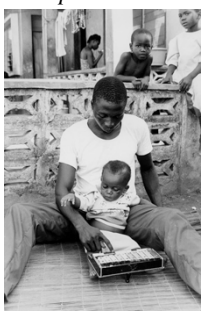
Infants Want to Share Stories

Baslie drops her book and points to her mother's telephone bill. It appears to be more important.

Adegbenro, Lagos, plays his piano with his mother.

(Photo © John and Penelope Hubley, 1979)

Mother and uncle in Adegbenro's *Zone of Proximal Development*.



(Photo © John and Penelope Hubley, 1979)

Adegbenro asks for his favourite rattle.

His mother gives it to him.

(Photos © John and Penelope Hubley, 1979)

"Look what I've got!" Mother smiles.

(Photo © John and Penelope Hubley, 1979)

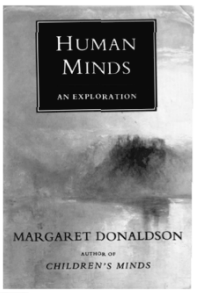
V -- BEYOND INFANCY
MASTERING THE MYSTERY
OF CULTURAL SKILLS,
WITH THE IMAGINATIVE
UNDERSTANDING OF TEACHERS
WHO ARE COMPANIONS

-

Emma 27 Months. Showing her Mother Reading, Counting & Having Tea (after counting she leant on the table and said "Number")

Imaginary hot tea with an empty cup, and passing invisible cake. It is the ritual that matters

By Donald Sinclair Swan,1989
National Galleries of Scotland



Margaret Donaldson-Salter **1992**
How Human Minds Grow

"Human sense is **understanding how to live in the human and physical worlds that children normally develop in the first few years of life**. It is learned spontaneously in direct encounters with these worlds that arise unavoidably everywhere, transcending cultural differences. The learning is always **informed and guided by emotion** - that is, by ***feelings of significance, of value, of what matters***. And it is highly stable and enduring, once established. **It is the foundation on which all that follows must build**."

(Donaldson, *Children's Minds*, 1978,)

"We all walk but we are not all ballet dancers. . . . We must *apply ourselves*. We must become able to guide and direct our own minds. Thus the need for discipline appears. And, though it is self-discipline that is in question, this is not easy to acquire unaided. Few can do it alone. The question is: what help is needed and how can it best be offered? This question, so simple in appearance, is *the* educational question. The answering of it is peculiarly delicate and difficult. For there is a narrow path between the pitfalls that lie on either side."
(Donaldson, *Human Minds*, 1992, pp. 252–253)

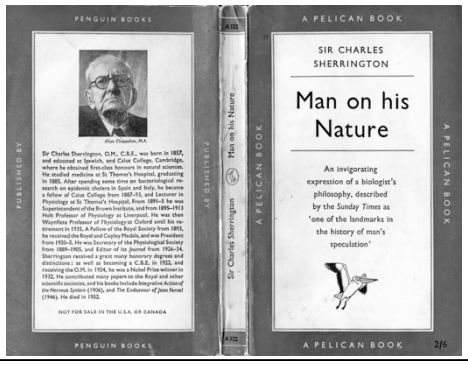
"**The paradox which wrecks so many promising theories of education is that the training which produces skill is so very apt to stifle imaginative zest**."

(Alfred North Whitehead,
Process and Reality,
pp. 338–339)

PSYCHOBIOLOGY
OF THE HUMAN SPIRIT

AND THE POWER
OF EMOTIONS

Sherrington's Gifford Lectures – 1937-1938
About how all life is creative by being imaginative



CONCEPTION:
HOW A PERSON'S LIFE IMAGINES LIVING

"It is not only man but it is the man John Brown, or the woman Mary Smith, whose exact like never was yet. An explanation once offered for the evolutionary process traced it to 'memory' in the ancestral cell. …. **It would be imagination rather than memory which we must assume for the ancestral cell; memory could not recall experience it never had**."

Sherrington, C. S. (1955). *Man On His Nature*. Harmondsworth: Penguin Books Ltd. Chapter 4, The Wisdom of the Body, pp. 103-104 The Gifford Lectures, 1937-1938.

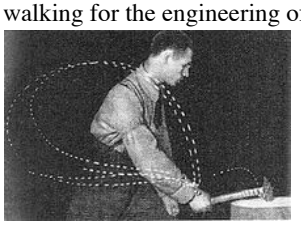
Lev Semyonovich Vygotsky (1896-1934)

Soviet psychologist, founder of a theory of human cultural and bio-social development or 'cultural-historical psychology'. He was interested how the meaning of creative activity is understood with others in daily life and in education, and how cultural knowledge in symbolic form is acquired in the child's 'zone of proximal development'. This natural philosophy of the interpersonal generation of meaning gained admiration and application after his death.

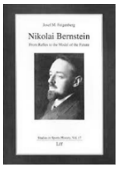
Nicholai Aleksandrovich Bernstein (1896-1966)

Building on Sherrington's discovery of the neural mechanisms of proprio-ception, and his theory of how actions of many body parts are integrated by the brain into of a single moving subject, the Russian physiologist Nicholai Bernstein, in the 1930s, made a brilliant analysis of *how human movements are generated in the brain,* ***imaginatively.*** His laws of 'biodynamic structures' that make movements explain how excitations of muscular activity are ***controlled by motor images.***

Bernstein studied how motor images generated in the brain produce efficient rhythmic actions with a heavy body of many parts and many biomechanical 'degrees of freedom'. He **a**pplied cyclographic techniques to show actions are composed of smaller movements. In 1926, he examined forces of human walking for the engineering of pedestrian bridges.



From Reflex to the Model of Future.



In the Moscow Central Institute of Labour in 1922, he measured manual work, e. g. cutting metal with a chisel, to optimize productivity. He studied how toddlers play with walking, and the effects of age and brain damage on its efficiency. In 1935, he gained a Doctor of Science without thesis, was one of the first members of the USSR Academy of Medical Sciences, and received the Stalin Prize for science.

Bernstein's theory of the brain's creation of movements was opposed by Pavlov, the author of conditioned reflex theory. It was known to Western scientists only in 1967, when *The Co-ordination and Regulation of Movements* was published in English.

Snorri Magnússon a swimming instructor in Iceland is a social pedagog who has devoted his professional career to baby swimming and he has taught/lead classes 6 days a week for 25 years.

Alba, girl, 3 months

Snorri demonstrates the role of a teacher's 'understanding'

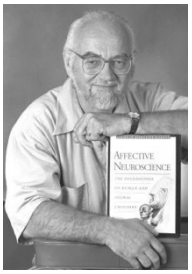
Life is expectant, seeking to know its effects. It is creative – playful. An embryo becomes 'self-aware' as its cells form a body; a foetus knows its vitality with first movements, aware of its own life and of the mother's – or a twin's.

The moving Self of the child builds projects cooperatively, with other vital selves, in playful companionship, sharing affections.

Jaak Panksepp

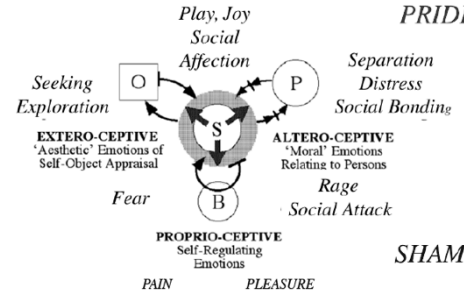
Baily Endowed Chair of Animal Well-Being Science at Washington State University Veterinary College and Emeritus Professor of Psychology at Bowling Green State.

Author of *Affective Neuroscience,* 1998



"It is commonly believed that consciousness is a higher brain function. Here we consider the likelihood .. that **lower brain affective phenomenal experiences provide the "energy" for the developmental construction of higher forms of cognitive consciousness**."

MAMMAL EMOTIONS IDENTIFIED BY PANKSEPP AND THEIR ROLE IN LIFE OF THE HUMAN SELF IN RELATIONSHIPS



These innate powers go through **Age-Related-Changes,** guiding learning and building knowledge or 'cognition'.

Stephen Porges

"We present a biobehavioural model that explains the neuro-biological mechanisms through which measures of vagal regulation of the heart are related to infant self-regulatory and social engagement skills.

. … **as cortical regulation of the brainstem improves during the first year of life, reciprocal social behaviour displaces feeding as the primary regulator of physiological state**."

(Porges and Furman, 2011, p. 106).

Bjørn Merker.
(2007): "Consciousness without a cerebral cortex: a challenge for neuroscience and medicine."
In: *The Behavioral and Brain Sciences* 30:63-134

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Antonio Damasio (2011). Neural basis of emotions. *Scholarpedia*, 6(3):1804

"The range of emotions is wide but finite. In humans it includes the programs of *fear, disgust, sadness, joy, anger,* and *surprise*, as well as a group of simpler programs such as *enthusiasm* or *discouragement*, known as background emotions. It also includes a group of very complex programs, usually known as social emotions, such as *embarrassment, shame, guilt, contempt, compassion,* and *admiration*.

FEELINGS AS EMOTIONS FOR THE ACTIVE AND AWARE SELF?

"Feelings of emotions are the perceptions of the action program that constitutes an emotion as it unfolds together with the salient representation of the causative object and with thoughts related to the situation. In organisms with … elaborate consciousness and memory, aspects of the feeling process are recorded and can be used for future planning and for optimized decision-making. In other words, *feelings … extend the advantages of emotions to the realm of conscious behavior*." (Damasio, 2011)

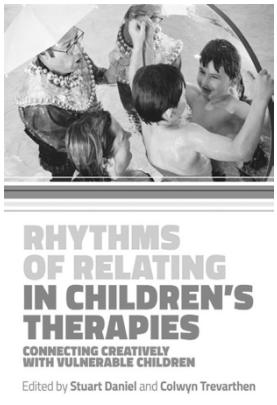
IMPLICATIONS FOR THERAPY

The new, positive, childhood psychology accepts that our minds are born to share interests, intentions and feelings, moving in sympathy – in brain time.

We communicate motivations and sympathetic feelings from the beginning of our life, by making sense of mutual experience, with the affectionate attention of special companions.

This sharing of vitality is the foundation of mental health, therapy, learning and education, from birth.

We must understand and respect it better.

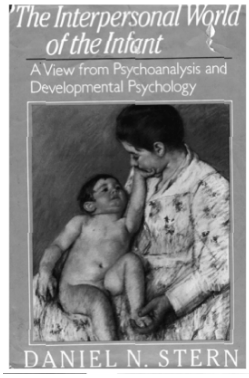


Stuart Daniel and Colwyn Trevarthen, 2017, London: JKP

This multidisciplinary book shows how to foster meaningful relationships between therapists and vulnerable children, through exploring the concept of communicative musicality and creating rhythms of connection.

It includes broad and in-depth contributions from leading therapists from diverse backgrounds - including Peter A. Levine, Daniel Hughes, Stephen Porges, Dennis McCarthy, and many more.

"This book attempts to create a dialogue between the infant as revealed by the experimental approach and as clinically constructed, in the sense of resolving the contradiction between theory and reality" (Stern, 1985, p. ix).



In the introduction to the 2000 edition of *The Interpersonal World* Stern says, "One consequence of the book's application of a narrative perspective to the non-verbal has been ***the discovery of a language useful to many psychotherapies that rely on the non verbal***. I am thinking particularly of dance, music, body, and movement therapies, as well as existential psychotherapies. This observation came as a pleasant surprise to me since I did not originally have such therapists in mind; my thinking has been enriched by coming to know them better." (Stern, 2000, p. xv).

"FORMS OF VITALITY: Exploring dynamic experience in psychology, the arts, psychotherapy, and development." **Daniel N. Stern** M. D. Oxford University Press, 2010.

Vitality dynamics are psychological, subjective phenomena … felt as aliveness … designed to fit the workings of the human world. They are. … **shapes of expressive movement**. They concern the **How**, the manner, the style, not the What nor the Why.

Di Cesare, G., Marchi, M., Errante, A., Fasano, F., and Rizzolatti, G. (2017). **Mirroring the Social Aspects of Speech and Actions: The Role of the Insula**. *Cerebral Cortex*, 28(4), 1348-1357.

"Action and speech may take different forms, being expressed, for example, gently or rudely. The insular sector involved in action vitality forms processing is connected with the left hemisphere areas controlling arm actions. The sector involved in speech vitality forms processing is linked with right hemisphere areas related to speech prosody. **We conclude that, the central part of the insula is a key region for vitality forms processing regardless of the modality by which they are conveyed or expressed."**

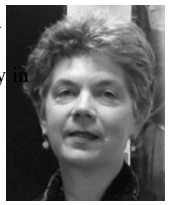
Susanne Katherina Langer (1895 - 1985), who played cello and piano, was one of the first women to achieve an academic career in philosophy and the first to be recognized as an American philosopher.

Known for her 1942 book *Philosophy in a New Key.*

"There are certain aspects of the so-called 'inner life', physical or mental, which have formal properties similar to those of music—patterns of motion and rest, of tension and release, of agreement and disagreement, preparation, fulfilment, excitation, sudden change, etc." (Langer, 1942, p. 228)

Nigel Osborne and student at a summer music camp near Sarajevo, BiH, 2009

Professor Mercedes Pavlicevic was a music therapist of international stature. Trained in Nordoff Robbins Music Therapy in London, she completed her PhD at the University of Edinburgh in Psychology. in which she developed the *Music Interaction Rating Scales (Schizophrenia)*, and her theory of Dynamic Form, based on therapist-client co-improvisation. Her best known books are *Music Therapy in Context, Groups in Music,* and *Music Therapy: Intimate Notes;* and, with Gary Ansdell, *Beginning Research in the Arts Therapies*, and *Community Music Therapy*. She was Director of Research at the Nordoff Robbins and director of the Music Therapy programme at the University of Pretoria, in South Africa.

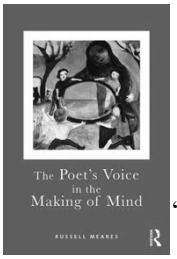


Robert Peter Hobson, psychoanalyst, Emeritus Professor of Developmental Psychopathology at UCL and psychotherapist at the Tavistock Clinic.

"clients discover the source of emotional difficulties through close examination of the relationship with the therapist - through therapy, they develop new ways of managing feelings and relationships."
"A disciplined 'conversational' approach to uncovering and understanding the truth of clients' mental life can remove obstacles to development and enhance capacities to work, love and play."

Russell Meares

Young children display the 'autopoetics' of life with body, face, voice, eyes and hands,



and they love to share it in 'consensuality' of story-making. Realising this leads to a different approach to psycotherapy. Meares has adopted Hobson's intimate 'conversational model' drawing on findings of infant studies.

Dan Hughes *Finding Our Way to Reciprocity: Working with Children Who Find it Difficult to Trust*

"I reflected on my frequent inability to help children who had been abused and neglected. … My initial goals were to help them to be less terrified by the traumatic events of their past. … I developed other goals, which focused on helping them to reduce the deep sense of shame they felt and which underpinned their conviction that they deserved the maltreatment that they had received." This led to his method of **Dyadic Developmental Psychotherapy**

DAN HUGHES, ON NEUROSCIENCE OF TRUST

"Dan Siegel (2012) and **Alan Schore** (2001) have developed a field of study known as **Interpersonal Neurobiology** that helps us to understand how the human brain is designed for relationships. Within a relationship, the brain is able to function in a more integrative and restorative manner, relying on a trusted other to help to make sense of highly stressful events in order to reduce their impact on one's life."

Toward a Comprehensive, Trauma-Informed Treatment for Developmental Trauma Disorder Dan Hughes, 18 February 2014.

"Stephen Porges (2012) describes … the Social Engagement System. This allows individuals to learn about themselves and others. This System is activated when a person experiences safety and this sense of safety is enhanced when the individual feels accepted by the other person. With safety and acceptance, an individual is more receptive to learning from the other person. … When the therapist and caregiver are able to establish safety and acceptance, the child is … more likely to become open and engaged with the adult and allow her to have a positive influence on him and his development." (Dan Hughes, 2014)

ON THE JOY OF BEING STRONG IN COMMUNICATION

"The sensitive and responsive therapist and caregiver need to engage with the child in an open and relaxed dialogue. ... The therapist and caregiver, communicate—nonverbally and verbally—their experience of the child's worth, strengths, courage, desire for a good life and caring qualities for others. This is likely to be crucial for the child to re-experience his sense of self and others. This will enable the child to discover a world that he is able to thrive in, no longer defined by the traumatic events of his past."

"This communication does not consist in simply telling the child that he is good, safe, and did not deserve to be traumatized. Rather it involves involving a child in a dialogue--**much like story-telling**--in which new meanings of the child's life-story, including the trauma, are being jointly developed through the impact they are having on the parent and therapist—and child.

These therapeutic communications are consistent with **central features of the dialogue that occurs between the parent and infant or toddler**."

SHARING DISCOVERY OF MEANING IN LIFE

James Jerome Gibson (1904-1979)

The Theory of Affordances.

Gibson developed a view of perception and action that focused on ***the active pick-up of information that is available in the environment***.

He rejected the separating of external-physical and internal-mental processes.

David Lee Professor Emeritus
Director, Perception-Movement-Action Research Consortium (PMARC)
University of Edinburgh, UK

"My aim is to discover principles of purposeful movements in humans and animals.
I am developing General Tau Theory to study the development of skills in infants; musical performance; sports; flying; rehabilitation of basic skills in Parkinson's Disease and Cerebellar Ataxia; sensory guidance of movement by individual cells; the electrical energy patterns in the brain that guide movement."

Karl Spencer Lashley (1890–1958

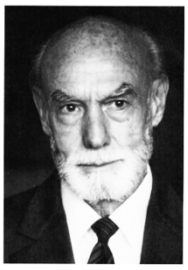
A psychologist who made major contributions to study of learning and memory and the functions of the cerebral cortex in the brain.

"GENERALITY OF THE PROBLEM OF SYNTAX.

Not only speech, but **all skilled acts** seem to involve the same problems of serial ordering … Analysis of the nervous mechanisms underlying order in the more primitive acts, may contribute ultimately to the resolution even of the physiology of logic."

(Lashley, 1951, *Serial Order in Behavior*)

Roger Wolcott Sperry (1913-1994)

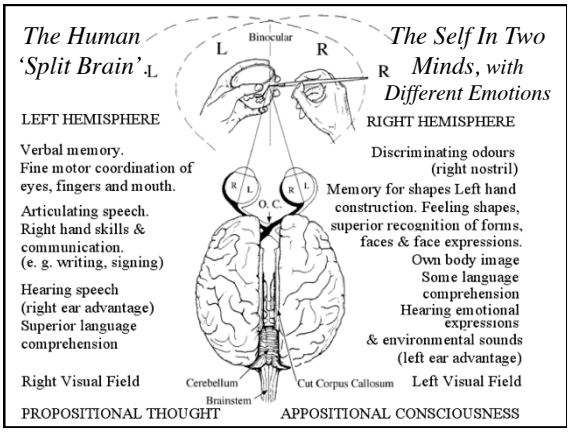


Roger Sperry, Nobel Prize 1981

"Consciousness is causal"

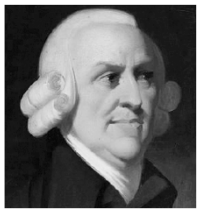
He revolutionized ideas of how brains grow circuits that map the body in movement and direct learning

"A Different Approach to the Problem
An analysis of our current thinking will show that it tends to suffer generally from a failure to view mental activities in their proper relation to motor behavior. .. In man as in the salamander the primary business of the brain continues to be the governing, directly or indirectly, of overt behavior. .. To the neurologist, .. it is readily, apparent that *the sole product of brain function is motor coordination*. .. In so far as an organism perceives a given object, it is prepared to respond with reference to it. *This preparation-to-respond is absent in an organism that has failed to perceive*." (Sperry, 1952)



In the 18th Century, **Francis Hutcheson**, Professor of Moral Philosophy at Glasgow University, scandalized many in the church with the assertion that morality should be judged by the feelings of happiness it engenders in others.. **He held that sympathy and morality were innate principles in humankind, not dependent upon reason.**
Hutcheson's pupils **Adam Smith** and **David Hume** were influenced by this teaching and elaborated it, though in different ways.

"As a disposition to imitate is natural to mankind from their infancy, so they universally receive pleasure from imitation. … Another important determination or sense of the soul we may call the *sympathetic*, different from all the external senses; by which, when we apprehend the state of others, our hearts naturally have a fellow-feeling with them. … We see this principle strongly working in children, where there are fewer distant views of interest. … This sympathy seems to extend to all our affections and passions. They all seem naturally contagious."(Francis Hutcheson, 1755, *A System of Moral Philosophy*, Vol. I, Chapter 2)



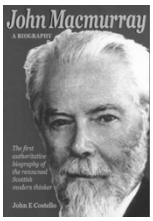
When I endeavour to examine my own conduct, … either to approve or to condemn it, it is evident that, in all such cases, **I divide myself, as it were, into two persons** … The first is the spectator, whose sentiments with regard to my own conduct I endeavour to enter into, … from that particular point of view. The second is the agent, the person whom I properly call myself, and of whose conduct, … I was endeavouring to form some opinion. The first is the judge; the second the person judged of. **Adam Smith** *TMS*, p. 182

"Sympathy ... may ... , without much impropriety, be made use of to denote our fellow-feeling with any passion whatever." (p. 10, 5)

"A smiling face is, to every body that sees it, a cheerful object; as a sorrowful countenance, on the other hand, is a melancholy one." (p. 11, 6)

The Theory of Moral Sentiments (1759) by Adam Smith (who was much more than an economist).

John Macmurray (1891-1976)
In the case the Scottish philosopher Macmurray made against individualism in the *Gifford Lectures*, he was not as sure as Smith of innate human powers. But, he did argue, in disagreement with the prevailing view of his fellow philosophers, that a human being is both an **intentional agent** who generates experience by acting, and a **person** who lives, from birth, **in relation to other persons**.



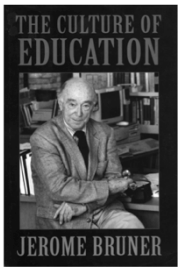
Macmurray, J. (1959) ***The Self as Agent***
(Volume I of *The Form of the Personal*)
London: Faber and Faber.

Macmurray, J. (1961) ***Persons in Relation***
(Volume II of *The Form of the Personal*)
London: Faber and Faber.

Macmurray's Gifford lectures were influenced by the new understanding of human relations, and the sources of consciousness of these relations, of the 'Object Relations' school of psychoanalysts.
In the preceding two decades, **Klein** and **Fairbairn** had broken away from Freud's conception of the original state of the mind in infancy. The knowing infant subject was seen by the Objects Relations Theory as a more motivated being with greater internal complexity of feelings and images.

Fairbairn claimed that the baby had a separate ego from birth, ready to engage with an external 'reality'.

Jerome Bruner "Why are we so intellectually dismissive towards narrative? … **Storytelling performs the dual cultural functions of making the strange familiar and ourselves private and distinctive**. If pupils are encouraged to think about the different outcomes that could have resulted from a set of circumstances, they are demonstrating useability of knowledge about a subject. Rather than just retaining knowledge and facts, they … use their imaginations to think about other outcomes. … This helps them to think about facing the future, and it stimulates the teacher too."
WE ARE BORN TO LEARN BY SHARING STORIES



It is surely the case that **schooling is only one small part of how a culture inducts the young into its canonical ways.** … What we resolve to do in school only makes sense when considered in the broader context of what the society intends to accomplish through its educational investment in the young. **How one conceives of education … is a function of how one conceives of culture and its aims, professed and otherwise**.
(Jerome S. Bruner *The Culture of Education*, 1996: ix-x)

TO LEARN MEANING IN STORIES IS OUR NATURE