

Dialogue on Intersubjectivity: Interview with Stein Bråten and Colwyn Trevarthen

Karette Stensæth and Gro Trondalen

Introduction

It is a sunny afternoon at Holmen Fjord hotel at Asker, outside Oslo. Stein Bråten and Colwyn Trevarthen, two international Nestors and authorities within infancy and communication research, are invited to a luncheon, addressing topics on human communication in general - and children, music and health in particular.¹ We have been attending the symposium “Music, Motion, and Emotion” for three days² and there is still a lot to talk about. Some questions are prepared beforehand and some arise in the here-and-now. During the enlightening luncheon, which entails an interesting dialogue on intersubjectivity, *alter centric participation*, *primary and secondary intersubjectivity*, *feelings*, *musicality* and *time* are discussed and related to historical and recent research.³

The luncheon

Trondalen: The basic idea is that Karette and I are editing a book on children, music and health and different kinds of people are writing...both in English and in Norwegian. So then this wonderful idea came up that we could have a talk with you two! Thank you for spending your time with us, even in your lunchtime. What we actually

1 See presentation of Bråten and Trevarthen in the back, after the references.

2 Thanks to the generosity of professor Hallgjerd Aksnes. The seminar is a part of the three years research project “Music, Motion, and Emotion. Theoretical and Psychological Implications of Musical Embodiment” headed by Aksnes. The project is supported by the The Research Council of Norway and the University of Oslo.

3 In order to go thoroughly into the topics and the influential people being discussed, the interview is completed with several explanations in the footnotes as well as significant references at the end of the text.

want, is to have a fluid conversation, we have some topics that we would put forward I think, but the main thing is that if you have anything important that you would like to tell us, then please do that. Then we transcribe everything, and do some cuts of it, and we would never publish without your permission.

Stensæth: This book is on children, music and health. And this is the fifth book in our *Series of anthologies at the Centre for music and health*.

Trevarthen: Children, music and health, yes...

Stensæth: This is a very broad topic. And in the other anthologies there have been music therapists writing, and music teachers, and music sociologists...

Trondalen: ... and psychiatrists

Stensæth: So actually this is broader than just music therapy, this is health in a broad sense; the way we talk about health today. So that's the topic. While we talk, feel free to enjoy your lunch.

Time Bråten: Whitehead (Alfred North Whitehead) considers everything in terms of actual locations, each actual location, something becoming, then perishing but not before leaving traces for the next actual location.⁴ So this is a procedural cosmology. It also meant that two actual locations can be shared in the unison of becoming, and hence, sharing presentational immediacy, and, so, in these terms, Whitehead offered his special interpretation of relativity while opening for a directly perceived immediate present, which Einstein could not accept. To Einstein, it was such that - in terms of two observers B and A as they have different frames of references they cannot share an absolute now, and hence cannot be truly simultaneous. That means, for example in my case with Thomas: When he is feeding his big sister and sharing in his big sister's act of food-intake, you have two different frames of references. This means that he

4 Bråten discusses Whitehead's ideas in Bråten 2009, pp. 85-86; 2000. Alfred North Whitehead (1861 –1947) was an English mathematician, who became a philosopher. Whitehead is also referred to in Malloch and Trevarthen, 2009. Whitehead influenced logic and virtuality. The genesis of his process philosophy may be attributed to his having witnessed the shocking collapse of Newtonian physics, due mainly to Albert Einstein's work (retrieved Feb. 9, 2012: http://en.wikipedia.org/wiki/Alfred_North_Whitehead).

cannot be - according to Einstein - simultaneous with himself, but surely it's the same Thomas who is operating here.⁵ This opens for questions about the present as raised for example by Peirce (; Charles Sanders Peirce) who spoke of...⁶

Trevarthen: He is a complicated man...

Bråten: ...Yes, he (Peirce) spoke of the present. Feeling has passed before there is time to reflect upon it. You can never recapitulate that feeling in itself. On the one hand, we never can think this is present to me. Since, before we have time for reflection, that sensation passes. On the other hand, when once passed we can never bring back the quality of that feeling as it was in and for itself. He takes up this and then point to the contradiction of making the mediate "immediable". And so he came to this with need, in his philosophy of the present, which to a certain extent invites comparison with the views of time voiced by Saint Augustine, and also by Buber (Martin Buber, the philosopher). For Saint Augustine, for example, "the future which the soul expects, passes through the present, to which it attends, into which it remembers"... You mentioned Bakhtin, that's so beautiful...⁷

Trevarthen: That is exactly what Adam Smith said about music. It exists between imagination and memory. And so does the whole of vitality... all the time. Sherrington (Charles Scott Sherrington, the master of modern physiology) says, in "Man On His Nature", that all living beings are products of their own 'imagination' – "An explanation once offered for the evolutionary process traced it to 'memory' in the

5 Bråten refers here to a video case of his, where a brother (11 months old) is feeding his big sister.

6 Peirce is discussed in the prologue, called "Consent and dissent" in Bråten 2000 and in 2009, pp. 84. Charles Sanders Peirce (1839 –1914) was an American philosopher, logician, mathematician, and scientist, who is appreciated largely for his contributions to logic, mathematics, philosophy, scientific methodology, and semiotics, - and for his founding of pragmatism. (Retrieved Feb. 9, 2012 at http://en.wikipedia.org/wiki/Charles_Sanders_Peirce).

7 Aurelius Augustinus (354–430 C.E.): *rhetor*, Christian Neoplatonist, North African Bishop, Doctor of the Roman Catholic Church. One of the decisive developments in the western philosophical tradition was the eventually widespread merging of the Greek philosophical tradition and the Judeo-Christian religious and scriptural traditions. Augustine is one of the main figures through and who accomplished this merging. He is, as well, one of the towering figures of medieval philosophy whose authority and thought came to exert a pervasive and enduring influence well into the modern period (e.g. Descartes and especially Malebranche), and even up to the present day, especially among those sympathetic to the religious tradition which he helped to shape (retrieved Feb. 9, 2012 at <http://plato.stanford.edu/entries/augustine/>)

ancestral cell. But such an explanation rests, even as analogy, on a misapprehension of the actual circumstances. It would be *imagination* rather than memory which we must assume for the ancestral cell; memory could not recall experience it never had.” (Sherrington 1940:104).

Stensæth: So interesting...

Trevarthen: So we will never know anything before it is finished.

Stensæth: That’s right.

Trevarthen: That’s good – we can have more conferences...

(Laughter)

Feelings

Bråten: Martin Buber, again as I mentioned, his notation of time, while in *I*, if you are the object here - a lot of times - and ambitions and goals and objectives and all kinds of things - while if you are you, to me, then, nothing intervenes between us and we are sharing an *I-Thou* relation in - I would say - in Whitehead’s terms of presentational immediacy. I just wanted to point out an important thing also about Whitehead’s cosmologies of course, that everything in the cosmos then consist of these actual locations, entail feelings as their basics, feelings...

Trevarthen: It is hugely important to give feelings authoritative, causal and creative voice in intentions and relationships, instead of treating them as the opposite - effects or consequences, or just protective biological regulations of the body.

Stensæth: ...It’s the primer...

Bråten: ...and of course Russell did not at all understand what Whitehead was writing about in his cosmology.⁸ He thought actually that due to the fact that Whitehead had lost his son in the war, that he had turned, you know...

8 Bråten discusses this in Bråten 2009, pp. 85-87. Bertrand Arthur William Russell (1872 –1970) co-authored with Whitehead (1927) *Principia Mathematica*, Cambridge. Whitehead’s cosmology was presented in A.N. Whitehead (1929) *Process and Reality*. See also Russell, B. (1961), *History of Western Philosophy*. London: George Allen & Unwin.

Trevarthen: ...gone soft, yes, stopped being a hard man... Yes, I think Russell was very opinionated. He inspired me when I was young, with his Reith Lectures in 1948. I thought it was wonderful to hear important matters of human life discussed so confidently and eloquently. In time I realized that his arguments were too intellectual, authoritative and abstract. Whitehead, Russell's teacher, changed, leaving cosmology applies his principles of process to education and the culture of knowledge. He wrote about the child's 'zest' or enthusiasm for learning. He asked: How do children learn? How does culture exist? We must not be too abstract. Don't you agree? In the end we have to come back to the real world.

Bråten: It's very difficult not to be abstract when you try to grasp time in a sense.

*Time,
again*

Trevarthen: Yes, perhaps. But I find myself concerned with the time that comes to life in the mind that moves an imaginative and inquisitive body, and that is shared in communion.

Bråten: Could I ... because you said, you had a comment to what I was putting forward because this is described in another note in this book (Bråten 2009, pp. 265-267). The real time arrow - and this is the way in which I had to arrest the real time arrow in my computer simulations of interpersonal interaction in order to allow two participants, A and B, to share in the moment before time moves on. Hence I have arrived at two complimentary notions of time; one, which runs un-arrested, while the other to a certain extent is arrested. So that there is a present moment in a true sense of the present moment, that extends a bit. When I wrote this in 1981 - I remember a colleague of mine in Germany - Niclas Luhmann - he thought this was crazy, "suspiciously demanding".

Trondalen: How do you think children perceive time? How do we think they perceive it? Do they perceive it? I don't know.

Bråten: At least before and after! I am thinking now of the video recording you (Trevarthen) showed of the little girl in the front of the mirror, where she had no notion of time passing, or time being arrested in that...

Trevarthen: I think children definitely can go into reflective states where they seem to be suspended in time. They become still and look at the distance, and they stop smiling. But I don't think that the child has a problem with time at all. In them, they are

moving in time, and I think that they - not only that - they have a sense of extended time, because of things, events, which have importance. That little girl in the video was following - the commentary is quite good actually (!), because it is being as a series of experiences that are building on each other, and are being shared. So I don't think many, many things that are huge problems in philosophy are not problems for children at all: Sympathy, time, narration and music. Music is so natural for them.

Musical back-grounds *Stensæth:* What's your relationship to music?

Bråten: I don't have any relation to music strictly academically scientifically. I have an experience as a young boy. Then I was singing blues on a guitar with a friend of mine. One Saturday they got a piano in my parents' house. In the evening I should attend the soirée with Egil Monn Iversen's orchestra playing at Fagerborg. I was sitting in the bath, thinking maybe I could try to do some blues on this piano? I didn't know notes or things like that, so I tried the black keys, finding them to correspond to blues chords, and tried to sing the blues with black key accompaniment, - and yes, it worked. So in the night when it was a pause in Monn Iversen's orchestra, I dared walk up to the piano on the stage and sat down singing the St. Louis Blues, and my song teacher was at the gallery, and he thought it was a record playing. And then he saw it was Stein... In the singing lesson on Monday, he asked me to go to the piano and repeat this - and I couldn't at all.

Trevarthen: Wrong instruction, too much regulation...

(Laughter)

Bråten: So that was my relation to music. But, I mean, I have enjoyed tremendously these days. I've learned a lot and I appreciate very much the importance of the work and research you are doing. And yes, I believe in music therapy.

Trondalen: Yes, and the dialoguing also... I remember the interview with Steven Malloch and you (Trevarthen) and I think the heading was "the dance of well-being".

Bråten: In one of the books I have edited "On being moved: From Mirror Neurons to Empathy" there were chapters on music, one by Birgit Kirkebæk on interplay between a musician and a deaf-blind child, and a chapter on "From infants to jazz" by Ben Schöger and Colwyn (Trevarthen).

Trevarthen: I actually had been imagining a book I might write, you know, called “Moving, being moved and meaning”. And then your book came out. Too bad...

(Laughter)

*Protocon-
versation
and babies’
rhythmic
movements*

Trevarthen: My interest in music was partly from my childhood... because it was a lot of music in my home: My mother was a musician. We always had appreciation for music. But I think what led me into thinking about the nature of music scientifically was my discovery that babies have wonderful rhythmic movements from birth ... and my realization that most measurements in experimental studies of the perceptions and learning of infants gave no attention to the shape of movements of response, and their timing... I got a sense that what made consciousness work from the start was a generator of intentions, a rhythmic generator of human time in actions, which controls a hierarchy of rhythms, that this generator expresses a spectrum of periods that is innate. And I came to this discovery by simply making precise analysis of spontaneous actions, beginning with the head-and-eye movements of the babies. I was surprised to find that the frequencies of rotation were comparable with those of adults. And then I found the same times in beautifully regulated arm and hand gestures the babies used to track objects. That work was enormously encouraged by the translation in 1967 of Bernstein’s brilliant studies of “The Coordination and Regulation of Movements”.

But what really got me interested in the inner time sense of human beings was the participating of very young babies in dancing protoconversations with their mothers, and the melody of the sounds they made together. I knew from the beginning that their affectionate talk was the same as song! And Mary Catherine Bateson⁹ and Daniel Stern¹⁰ came to the same conclusion. We all three discovered infants’ conversational abilities at the same time, around 1970, but we did not know about each other for several years! The woman who made us all know each other was Margaret Bullowa who edited her brilliant book “Before Speech”, in which she brought people

9 Mary Catherine Bateson, a well-known American writer, linguist and cultural anthropologist, is the daughter of two famous anthropologists, Gregory Bateson and Margaret Mead. She was encouraged by Margaret Bullowa, in 1969-72, to study a film of a 9-week-old baby communicating with the mother, and she discovered, and named, ‘proto-conversation’.

10 Daniel Stern, a psychiatrist, began his research on infant-mother communication after becoming inspired by the descriptive methods of ethologists and before beginning his training in psychoanalysis, with a study of play between a mother and her three-month-old twins (Stern 1971). This led to a revolutionary work on the development of relationships, “The Interpersonal World of the Infant” (1985), which questioned the Freudian interpretation of the formation of the psyche.

together in the United States and Britain to report “how scientists go about finding out how infants and adults communicate with one another”.¹¹

For more than 10 years I collected information on the intimate patterns of expressive movement between mothers and infants attempting to give a precise account taking account of the shared timing. Then, in 1985, I collaborated with Steven Malloch who gave me the means for giving a precise account of the parameters of their collaboration. Stephen’s knowledge of music for acoustics made it possible to be precise about what we have been working on since 1967. The result of our collaboration is the theory of “Communicative Musicality”, and the joint editorship of the book with that title.

*Words
and
double
meanings*

I have been thinking about the title of the chapter that I published with Penelope Hubley in Andy Lock’s book “Action, Gesture and Symbol” (1978), because I am quite proud of it. It’s called “Confidence, confiding and acts of meaning”. I think *confidence* is more interesting word than *regulation*. It is a very interesting word because it has meanings pointing in two directions, toward an Other, and toward the Self: A confidence is some secret from within you, that you share. So being confident is having something to say and confiding is sharing. And this doubleness of meaning, its sympathetic intersubjectivity, is wonderful. Words that are important often have a moral, double meaning... Another one describes the two sides of *showing off*. It is interesting that in the Yorkshire dialect of English, *chuffed* means feeling very pleased with yourself. But a *chuff* is a bore, a boring person. So it’s a delicate balance: You mustn’t be too pleased with yourself, otherwise you are boring. The same may be said for ‘pride’ and ‘shame’ – they are emotions about one’s Self-awareness in relation with the awareness of an Other. This ‘second person’ awareness is brilliantly explored by Vasudevi Reddy in her book “How Infants Know Minds” (2008)

(Laughter)

Stensæth: Dialogue in Russian means opposition. I think that is very interesting for a music therapist. In order to *share something* you also have to *challenge* sometimes.

11 Margaret Bullowa (1909-1979) was a child psychiatrist interested in dialogue between patients and clinicians who turned her attention in 1960 to the development of communication. In her very informative Introduction to her book she says, “While helping with the preliminaries for the Third International Child Language Symposium in London in 1975 and preparing to chair the section called ‘Prespeech’ it occurred to me that a book about pre-linguistic communication would be timely and useful”. Sadly, she died before the book was published.

Trevarthen: That's interesting!

Stensæth: You have to pose... It's from Bakhtin (1981).

Bråten: On the other hand, you also have in Russian, the beautiful word *soznanie* for consciousness, which means "knowing with". We don't have that in Norwegian: "Bevissthet" doesn't capture this duality. So here you have *soznanie* opening for dialogue...

Stensæth: I have to complement, I was not the one to talk... but this is very interesting: "Understanding" in German is based on the two 1) to understand and 2) to come to understanding with someone; or to stand in front of someone versus standing under...

*Communi-
cative
Musicality*

Trevarthen: Steven and I have enjoyed thinking about the distinction between what we mean by 'musicality' and the art of 'music'. Musicality is much a bigger sense and music is cultivated. But, I think we've got to be careful because very good music, cultivated in the most refined way, is strong in musicality, it must be. There is no question about going away from musicality when one creates or performs music as art. And you can't replace musicality by music. Music only comes about when a human being or a group of human beings make sounds that are expressive of the musicality of expressive body movement.

Trondalen: Could you say a few more things about how you think on musicality, when you say in a broader sense? I remember you have been talking a bit about it these days.

Trevarthen: I think obviously the term can be extended to describe the moving of dance. But there is a musicality in everything we do well, in its graceful narrating. I am delighted with the step into logic made by Karl Lashley when he is writing about the serial ordering of movements and its relationship to linguistic syntax. He said, "Not only speech, but all skilled acts seem to involve the same problems of serial ordering, even down to the temporal coordination of muscular contractions in such a movement as reaching and grasping. 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 1951:122).¹² I've had the idea for a long time, that propositional thought has musicality and narration related to the way we move.

12 Lashley, K. S. (1951). The problems of serial order in behavior. In: L. A. Jeffress (ed.), *Cerebral Mechanisms in Behavior*. New York: Wiley, pp. 112-136.

I remember arguing with my colleague Margaret Donaldson, who is a very careful, clear thinking person, and also very passionate and imaginative, that logic requires emotional persuasion.¹³ Logic may be extremely pragmatic as a set of instructions. But it is passionate in its claim for clarity and ‘truthfulness’. Actually I think Charles Saunders Peirce came near to saying the same in his exploration of pragmatism and the relations between logic, ethics and aesthetics.¹⁴

Bråten: Absolutely.

Trevarthen: I’m interested in elementary dynamics, but often also to the expressive parameters of musicality that Steven Malloch specified as ‘pulse’, ‘quality’ and especially ‘narrative’. The idea that narrative can be without words or specific reference worries those who focus on talk and text. Stephen’s definition of narrative is the combination of organized pulse and quality in musical sound that enables people to share “a sense of purpose of passing time”¹⁵. Passing time means doing time you know by being, and moving, in time. And it may be shared...., I think narration is a moral act. It carries obligation to be comprehensible or experienced as expressing purpose. We have to make our lives into a story that we can share. So I’m interested in the musicality of that, the actual metrics of story making.

Trondalen: But narrative is not necessarily related to semantics?

Trevarthen: No, it is not, in my sense, dependent on verbal meaning

Trondalen: No. Exactly.

Trevarthen: Narratives may be made in wordless gesture or playing an instrument.

Bråten: ...or in movements of any kind

13 Donaldson, M. (1992). *Human Minds: An Exploration*. London: Allen Lane/Penguin Books.

14 Buchler, J. (ed.) (1940) *The Philosophy of Peirce: Selected Writings*. London: Routledge and Kegan Paul. [Republished in 1955 as: *Philosophical Writings of Peirce*. New York: Dover.].

15 Malloch, S. (1999) Mother and infants and communicative musicality. In: *Rhythms, Musical Narrative, and the Origins of Human Communication. Musicae Scientiae, Special Issue, 1999-2000*, Deliège, I., ed. Liège, Belgium: European Society for the Cognitive Sciences of Music, pp. 29-57.

Trevarthen: Linguistic semantics is dependent on narration, or dependent on a purposeful syntax. That's what Lashley said. When he wrote about the importance of serial ordering for language he wasn't talking about semantics, but about syntax. They connected because unfortunately we have this terrible cortex that contains huge masses of information that we have to sort it somehow, so we have to label the boxes. And then we have to retrace how their meaning can be unpacked. I'm puzzled by one thing...

Perhaps you could help me out. How do I relate the shifting contents of our visual consciousness of elements of the outside world, its infinitely rich and often static detail, with the on-going experience and liveliness of hearing music? It is almost like there are two worlds and we cannot combine them. There is one or the other: The rational, realistic, highly categorized, structural world that we see and things happening in it, which we call 'real' phenomena, in the dispassionate kind of way. But then, hearing and feeling with the body, is different. I am beginning to explore this with Pauline von Bonsdorff, a professor of aesthetics, from Jyväskylä, Finland who knows well the work of Maurice Merleau-Ponty¹⁶. Because I want to try to work out with her the relationship between feelings of the body and its movements and seeing beauty. There are some things that we see with feeling, like the colour or flowers or fruit or the sunset or something, and also the human body, and especially the lively beauty of children. And that's very different than seeing objects of practical use, which is mostly what we do with every-day vision.

Trondalen: Do you mean aesthetic in terms of sensing, perceiving?

Trevarthen: I think valuing. And it is a feeling. I'm quite sure that there is no aesthetics without relating the perception of the thing to bodily feeling, and action.

Music and pause
Bråten: I learned something today. I've been concerned about, during conversations, when one pauses slightly, then the other often completes the statement - and have analysed a lot of protocols and things like that in such terms -, but I hadn't realized that this of course is very important in music also. I noticed that several times today. The pause invites...

Trevarthen: ...the feeling of completing comes just after the pause and it's like the fulfilment of the inner feeling of the realization of the act, which was commencing then ... and now I feel it concluding.

16 Merleau-Ponty, M. (1945) *Phénoménologie de la Perception*. Paris: Gallimard

And that happens all the time in music, in the improvisation of a duet, or playing or singing with an accompaniment, or when a conductor is leading, and following, the orchestra.

Stensæth: I just have a response to what you said about the differences between the senses...

Trevarthen: ... the stillness of vision? ...

Stensæth: ... or the tension between the two kind of worlds or structure. I think that's about creativity, in a big sense. And the interesting thing is i.e. autistic children who are stuck in structure in many ways. I'm very struck by their capacity to let go of that structure, when they feel free and safe within music. So that's a picture to me of how this tension has to be there in a way, between control and freedom and creativity and feeling and logic in a way. There always has to be a tension.

Trevarthen: Do you remember the diagram? I showed a diagram and I think I told you about the observations of Mikis Theodorakis at a meeting in Crete. Who was it that used a diagram with four quadrants?

Bråten: I did.

Trevarthen: Yes, you. There is the body and that's the axis, to which are related the person and the object. Now, the arrows at the sides I called art and technique. Theodorakis told us there were two kinds of rites in ancient Greece and in the performance of music and in all the achievements of culture they must come together and be integrated together in harmony. From that coming together arises meaning. He was talking about the problem on how they relate in human affairs. The two ways of acting and experiencing have to be brought together.

The professor of aesthetics I mentioned, von Bonsdorff, who is now concentrating on the aesthetics of childhood, began her career with interest in the aesthetics of buildings and cities. Plato was very interested in that, in architectural symmetry, the measurement of music, and so forth. Now, how does a harmonious building relate to feelings of wellbeing? We have a big, heavy body, and we have to balance it. We have to have a sense of balance. And a building that is off balance, like the leaning tower of Pisa, is disturbing, ... unless you want to use it like Galileo, to study gravity.

Stensæth: The disturbing part is interesting, because the delayed melody is what's interesting. That is where the tension occurs and the feeling occurs. So the Pisa is really important.

Humour Trevarthen: I think the girl in the video we saw is very informative, with her 'joking, teasing and mucking about', as Vasudevi Reddy describes it.¹⁷ As she says, the crucial, the kind of game that is played in good relationships is humour and teasing. There is much more teasing in good relationships, than there is in bad ones. You dare not tease in a bad relationship.

Stensæth: That's important.

Trondalen: ... especially among cultures.

Trevarthen: Yes, you've got to be very careful.

Trondalen: Oh, yes!

Trevarthen: Because they mistake a casual, well-meaning joke for a very rude act.

Trondalen: I was thinking of different cultures. When I was in Korea now, the singer, she didn't move...

Trevarthen: Oh, that's interesting.

Trondalen: ...and then they moved so artificially, with their hands.

Trevarthen: OK. So it is stylized according to their conventions? We have a chapter in the *Communicative Musicality* book on gestures made by Amy Wu is a popular singer from Hong Kong while she was singing.¹⁸ Gesture in singing is often restrained and then restricted to cultivated forms. That is interesting. A study of the

17 Reddy, V. (1991) Playing with others' expectations; teasing and mucking about in the first year. In: A. Whiten (Ed.) *Natural Theories of Mind: Evolution, Development and Simulation of Everyday Mindreading*. Oxford: Blackwell, pp. 143-158. See also Reddy, V. (2008). *How Infants Know Minds*. Cambridge MA: Harvard University Press.

18 Davidson, J. and Malloch, S. (2009). Musical communication: The body movements of performance. In Malloch, S. and Trevarthen, C. (Eds.) *Communicative Musicality: Exploring the Basis of Human Companionship*. Oxford: Oxford University Press, pp. 565-584.

very popular Scottish singer Annie Lennox – of her singing and of her gestures while singing - compared them during her career. As she became more successful, famous, her gestures changed, and they became less sensuous and provocative, more restrained and stylized.¹⁹

Health and well-being *Trondalen:* I wonder if you could explore upon... As you know we have the word *health* - in the U.S. you often say *wellbeing*...

Trevarthen: Yes, that's a good word (well-being).

Stensæth: ... life quality ...

Trevarthen: Oh, that's different, that sounds more commercial...

Trondalen: ...very commercial maybe?

Stensæth: You like wellbeing better? Health is a new concept. It's a kind of trend.

Trondalen: When the dialogue is functioning, even though it is sometimes regulated, amongst them, would that promote health? Would that promote wellbeing?

Trevarthen: Yes, I'm sure a good dialogue does promote well-being. I mean, to have your wellbeing confirmed and shared makes it even better. It's nice to feel comfortable and well-being and well-rested and well-fed, but it's very nice to be well-appreciated.

Stensæth: That's true.

Trevarthen: That's why I'm interested in the interpersonal or 'moral' emotions and their development- I'm impressed how early we discover the self-conscious emotions of 'pride' and 'shame' in infants' expressions of emotion.

Pride and shame

Trondalen: I didn't think so much about it until you showed us now, what pride and shame six-seven months babies show...

Trevarthen: Oh, even much earlier!

19 Davidson, J.W. (2001). 'The role of the body in the production and perception of solo vocal performance: A case study of Annie Lennox', *Musicae Scientiae*, 5(2), pp. 235-256.

Trondalen: Yes, but I remember you had some examples...

Trevarthen: ...Four-five months old, we've identified self-consciousness at three months. And I think even new-borns sometimes look like they think you're crazy and wish you would go away. When you are doing an experiment on imitation infants act as if your demonstration is a joke - I love the instance described by Olga Maratos. She was testing a very young infant for the ability to imitate tongue protrusion, and the baby laughed when Olga put her tongue out. I think that was entirely appropriate. (Laughter)

Trondalen: What was the genesis of your concept of the virtual other?

*The
virtual
other*

Bråten: Thank you for asking. When I was doing my computer simulation studies, I related to cybernetics systems theory, and that included biologists like Humberto Maturana and Francisco Varela.²⁰ And they had this powerful notion of autopoiesis. And I thought that was a very powerful notion. And in a sense I bow to it. But I could not at all accept the monadic sense of it, that each of us would go around like monadic self closed, self organizing monads. And when attending a meeting, Luhmann organized, I had mentioned Maturanas notion of autopoiesis to him, but I warned against it because it is monadic. But I was pondering upon the problem about connection in a conference in 1985. How could it be possible, if you accept that there is an autopoietic organisation, how could two auto-poietic organisations make up a dyad? And I grappled with this and had a dream in late January 1986. My wife worked in shipbuilding, in a shipping company with containerships. And in my dream, I dreamed that there were two container wagons on rails, parallel trails, from the ship into the warehouse on the harbour. And I was standing in this warehouse, looking up at these two containers, and said to myself: If there were space in one of them for the luggage from the other, then my problem would be solved. And halfway in the dream, halfway awake: If one was born with a virtual companion space into which the other one could step then, even if self-organizing closure, then such a dyad could be constituted.

Trevarthen: Wonderful!

20 Bråten discusses Maturana and the notion autopoiesis in Bråten 2000. Francisco Javier Varela García (1946–2001), was a Chilean biologist, philosopher and neuroscientist who, together with his teacher Humberto Maturana (b. 1928), Chilean biologist and philosopher, are known for introducing the concept of autopoiesis to biology. Autopoieses literally means “self-creation” and expresses a fundamental dialectic among structure, mechanism and function (retrieved Feb. 8, 2012 at <http://en.wikipedia.org/wiki/Autopoiesis>).

Bråten: So I worked a bit on this and got the opportunity to present it at the Gordon Research Conference on cybernetics and cognition in the United States organized by Heinz von Foerster and Ernst von Glasersfeld. There were lots of people there and I expected them to laugh at me or ignore me completely, but nothing of that happened. People came up to me and, even Hermina Sinclair from the Piaget-quarter, saying that this made sense. And I was very surprised by her statement – after all, prior to birth the child fills the mother’s space. And then I managed to write out these things and not very long after Colwyn and I met...

Trevarthen: That’s when we met, yes...

Bråten: ... affording empirical confirmation, and you told me about Daniel Stern, and then the three of us... So that was the way. Thank you for asking!

Trondalen: Yes. A dream. Sorry, did you want to add something?

Bråten: No, please, thank you!

Trondalen: Primary intersubjectivity (...)

(Laughter)

*Primer
inter-
subject-
ivity*

Trevarthen: Yes, well, there is a funny history actually. In 1967 I went to the States to work at Harvard with Jerome Bruner, the American psychologist, and began to study infants with an English ethologist Martin Richards. Martin and I were on the boat together crossing to the US and that’s where we met. He was going to study maternal behaviour of hamsters at Princeton. And I was going to study arm movements of babies learning to use a cup, with Bruner. I was there with my wife and my young baby son, David, and Martin had a girlfriend called Joanna Ryan. Now, Martin Richards came to visit me after I got installed at Harvard one day. And in William James Hall at Harvard he went up the elevator with Bruner, who said: “What do you do?” And Martin said: “I do maternal behaviour on hamsters”, and Jerome Bruner said: “Wouldn’t you like to join our group studying babies’ arm movements, using film?”

(Laughter)

Trevarthen: So that's how Martin and I got together. Joanna became interested in Bruner's work on categorical organisation of experience and the development of language. Later she wrote a paper in 1974 for a book edited by Martin, in which she talked about Jürgen Habermas and his concept of intersubjectivity.²¹ And I read this and I was impressed. She was talking about the natural foundations of 'communicative competence', before language. She said that linguists should pay much more attention to pre-verbal communication if they were going to understand the rules of language. And then she cited Habermas' of 'language constituent universals'. Martin and I had changed our interest in the summer of 1968, to make detailed studies of films of mother-infant interaction²²

Trondalen: Wow, that early?

Conversations with a two-month-old

Trevarthen: Yes, that's when we started. We knew by 1970 that we had a completely different psychology. We could not find anything in the literature about what we were recording and analysing. We did not know then that down the road, three miles away, Mary Catherin Bateson were coming to the same conclusions, by watching films. And we didn't know that Daniel Stern was beginning to think of things like this inspired by some of the work on conversational analysis by William Condon.²³ Bateson, Stern and Condon all appear in the book by Margaret Bullowa. I published a paper in 1974 called "Conversations with a two-month-old".

Bråten: In *The New Scientist*.

Trevarthen: In "New Scientist", yes, "Conversations with a two-month-old"²⁴. But then in 1979 Margaret Bateson asked me to write a chapter on mother-infant communication and I decided that I was going to stick my neck out. And I talked about 'innate intersubjectivity' even in the conversation with a two-month-old. And I did it

21 Ryan, J. (1974). Early language development: Towards a communicational analysis. In M. P. M. Richards (Ed.), *The Integration of a Child into a Social World*. London: Cambridge University Press, pp. 185-213

22 The development of the work and the concept of primary intersubjectivity is summarised in Trevarthen, C. (1998a). The concept and foundations of infant intersubjectivity. In S. Bråten (Ed.), *Intersubjective Communication and Emotion in Early Ontogeny*. Cambridge: Cambridge University Press, pp. 15-46.

23 William S. Condon investigates human interactions and developed the concept of *situation synchrony*.

24 Trevarthen, C. (1974). Conversations with a two-month-old. *New Scientist*, 2 May, pp. 230-235.

deliberately to be provocative, because I was using words that were not kosher; they were forbidden, innate. And I got the most amazing abuse, people mocking the idea that babies could sing a long with their gestures and that they could communicate. But I realized that I was on to something good. I went back and thought about what I had been knowing for years...I made a discovery with some research students that the monkey's visual consciousness depended which arm it was using. I could switch it from one disconnected hemisphere to another, by just changing the hands. And they could have two simultaneous consciousness's of what to do: One which worked with the right hand and one worked with the left hand. But what is important is that the intension to move switched the awareness from one hemisphere to another. So I knew that movement was critically important. In that chapter on primer inter-subjectivity I first of all defined subjectivity very carefully as being the capacity of a single Self to organize movements purposefully and with interest. And then having said that - this is a Stein Bråten-thing which I didn't know about then - the mother and infant form a close system which responded very powerful to each other, and incidentally I think you have to admit the inter-synchrony notion of Condon is very important: William Condon's idea that you can have self-synchrony within parts of your body, but in interaction with someone else; you can have inter-synchrony, which would lift the thing to a higher level of coordination. And that was early. That was in the seventies. So all of these ideas were around.

Daniel Stern

And then Stern was being a bit conservative still. He thought there could be no intersubjectivity...

Bråten: Not that early!

Trevarthen: Not that early -.

Bråten: But then I told him about mirror neurons - and he also got my identification of alter centric participation, and he also had some other new information - so he then added this in a correcting introduction to the paperback edition of his new versions of his book in 2000, in stead of rewriting his original.

Trevarthen: He didn't touch it.

Trondalen: No...

Trevarthen: But then he wrote this very charming introduction...

Bråten: Oh, it's so wonderful.

Trondalen: ... giving credits to both of you!

Trevarthen: He is a lovely guy. And it was a fascinating period.

Bråten: And you know - may I - it has to do with Daniel Stern? In 1990 my house halfway burned down. I was completing a book...

Trevarthen: ...It wasn't Dan's fault...

(Laughter)

Bråten: I was completing a book on "Born with the other in mind". Being afraid of fire, we had replaced the electricity wires in the house, but the electrician advised us to install reflector ovens over each of the entrances. One of those exploded, setting the house on fire. The night before I had gathered three computers in my library to take back-ups and on the gallery I had collected several video recordings, in order to make video recording back-ups. The fire-people were there right before we could roll out the water hose. I was standing outside and saw the flames with the fire-chief; Oh my book! I was allowed to go, with two boys, into my library and brought out to the garage of our neighbour and the fire people used some drying system on it. So part of all this was retrieved. But I had to re-design the house and everything, so I didn't have time to finish that book. Instead I hastily mailed an incomplete composition "Born with the other in mind", but not a book, which I sent to Daniel (Stern) and to you (Colwyn Trevarthen) I think. So this was referred to, I think by Daniel Stern in a talk in London and also in Jerusalem, but he couldn't point to a published book because it did not exist. And now, nearly twenty years later it finally appeared. And of course, it was a blessing in disguise, I say, because in the meantime there had been a further confirmation as well as corroborating studies, etc.. And Daniel Stern - when I sent to him this "Born with the other in mind" - he wrote immediately a complimentary letter to me! And I was very pleased by that reaction. It helped me recover from this terrible loss!

Trevarthen: Yes, it is interesting that disasters lead to a kind of recreation.

Trondalen: But you have given credit to Daniel Stern, acknowledging his term of Forms of vitality. So it fits with your thinking...

Bråten: ...and the staircase...

Trondalen: ..the staircase model!

Bråten: Very important that you have the deeper layers throughout life, supporting the higher layers!

Trevarthen: I think that we should give credit to Halliday.²⁵ Because I think he had very much the same notion, and he has been struggling as a socio-linguist focusing on acts of communication against the structural, computational linguistic tide, you know. He clearly articulated important notions on language development, in terms of the social function of language. He has a staircase model, which is very similar to that of Stern.

Bråten: Which year did he publish?

Trevarthen: He wrote first in the 1970s. The book he published in 1975 is entitled "Learning how to mean". I think that is a wonderful expression, "learning how to mean", using meaning as a verb.²⁶

Music therapy *Trondalen:* So where are we heading - in research? Where are we heading in this field of... this area were you have contributed so tremendously towards? And what do you think music therapy's contribution should be?

25 Michael Halliday (often M.A.K. Halliday) is a British linguist who developed the internationally influential *systemic functional linguistic* model of language. His grammatical descriptions go by the name of *systemic functional grammar (SFG)*. Halliday describes language as a semiotic system, "not in the sense of a system of signs, but a systemic resource for meaning". For Halliday, language is a "meaning potential"; by extension, he defines linguistics as the study of "how people exchange meanings by 'linguaging'" (retrieved Febr. 12, 2012 at http://en.wikipedia.org/wiki/Michael_Halliday) The paper was published in 1977. It is possible to cite the article at: <http://journals.cambridge.org/action/displayAbstract;jsessionid=A07DFF7D134EFAF8E699B0A2504C7295.journals?fromPage=online&aid=2923236>

26 Halliday, M. A. K. (1975) *Learning How to Mean: Explorations in the Development of Language*. London: Edward Arnold

Trevarthen: Oh, I think music therapy is gaining a strong, scientifically grounded, place at last, in spite of the scepticism of the medical profession. It's obvious that it's not just one of many ways to help people who are having problems with their anxieties and communication. It makes effective application of key concepts of the theory of embodied intersubjectivity, which is gaining ground. Thus the developing practice of music therapy is part of a scientific revolution. I think that the conceptions that are involved, the explanations of what you can achieve with communication by non-verbal means are pure psychology. It is no longer an eccentric fringe practice to be regarded as very odd by the medical profession.

(Laughter)

Bråten: An important feature of music therapy, as I understand it, is the beautiful way of being multidisciplinary and of course, differing from the academic, which has these high borders between disciplines. You have to cross, like we all have been doing all our lives.

Trevarthen: It's interesting that the technology is helping, with fine analysis of vocal processes and also of gesture. I really think things will be changed further when we understand the expressive movement of hands better!

Trondalen: ...the hands...

Trevarthen: ...when we understand the different ways each of the hands move, and how the two move together! Certainly we will see what's going on, in the strange interior of the mind.

*Under-
standing
the hands*

Stensæth: Saying something else than what comes out of the mouth...

Trevarthen: Yes. And music of course is a sound image of human body movement in expressive form. It's interesting that the voice has the agility to reproduce any gesture of the hands, and that the hands can imitate the voice. By the combination of prosody with rhythm and articulation - speech and song can gesture like the hands, or like the expressions of the face. Ivan Fonagy, a Hungarian philologist, made a study of the organs of expression and of the function of prosody in the communication of states of

mind, explained in his book “Languages Within Language.”²⁷ His son Peter Fonagy is Freud Memorial Professor of Psychoanalysis at University College, London, and he promotes the ‘theory of mind’ theory and ‘mentalizing’, attributing mental illness to malfunction of these two.²⁸ I feel he has gone off the rails laid down by his father’s work on expression of feelings.

(Laughter)

Trondalen: But at least he is famous!

Bråten: You have these two different versions of theory of mind. You have the theory construction version, which is very intellectual and you have the simulation version, which is not intellectual, but immediate and non-reflective.

Trevarthen: Mostly it’s presented as verbal! As talking about thinking

Bråten: But the simulation version need not be verbal, it’s intuitive!

Trevarthen: Who can you point out to be a “simulationist”, a part from yourself?

Bråten: Well, I discussed it in the book.²⁹

Trevarthen: Yes, but who is a simulationist for the Theory of mind? Don’t go to the book, just think, is there anybody?

(Laughter)

Bråten: Except from me?

Trevarthen: Yes, except from you.

Bråten: Yes, there are several.

27 Fónagy, I. (2001). *Languages Within Language: An Evolutive Approach*. Amsterdam/Philadelphia: John Benjamins.

28 Retrieved May 14, 2012 at <http://www.ucl.ac.uk/psychoanalysis/unit-staff/peter.htm>.

29 Bråten refers here to his 2009-book *The Intersubjective Mirror*.

Trevarthen: I'm afraid I have written a paper about infant communication needing no theory of mind.

Bråten: Yes, children's mind-reading comes later. Gallese is one advocate of the simulation version, which he finds to be supported by the mirror neurons discovery, and which has nothing to do with theory construction.³⁰

Trevarthen: No..

Bråten: These are two widely different notions, even though they share the same referent domain.

Trevarthen: By the way, I must go back to the 1974-paper, because I'm sure that in one section in that, or one of the papers I wrote in the early seventies, I said: As far as the neuro mechanisms, I think we know nothing. But there probably is a mechanism maybe in the frontal lobe of the brain...³¹

Bråten: Good!

Trevarthen: ...that can represent other persons' actions. I had been working on the brain, thinking about its development and structure and so on, and I couldn't think of any explanation of protoconversation. I know that you anticipated, but I wanted to see if I did too.

(Laughter)

30 Vittorio Gallese is one of the discoverers of mirror neurons. He has written the article "Mirror neurons and the simulation theory of mind-reading" (with Alvin Goldman), referred to by Bråten (2009, pp. 43, 256-260), and also referred to in an *Impulse* interview with Bråten and Gallese (2004) on mirror neurons systems implications.

31 Trevarthen adds in an e-mail after reading this interview: "In 1974, emphasising the rhythmic properties of expressions, I said, "when a newborn is alert and coordinated, its still very rudimentary movements have, nevertheless, the pace as well as the form of activities such as looking, listening, and reaching to touch, from the start. This can be perceived and reacted to unconsciously by an older person. As the person approaches the infant, acting gently and carefully as people tend to do instinctively to a baby, then all the emanations from this approach have rhythmic properties that are comparable with those inside the movement-generating mechanisms of the infant's brain. From this correspondence I believe the infant builds a bridge to persons."

Trevarthen: See, we belong, we're like brothers!

(Laughter)

Stensæth: You are simulationists? Could you explain "simulationists"?

Bråten: Well, it is a version of participant mirroring, actually, and being done unwittingly, not reflectingly, not consciously. Unlike theory of mind in the constructive sense, which is a very aware, conscious kind of "I understand what you understand".

Stensæth: I see. I am a simulationist! So then you found one!

Bråten: Could I just point out that Habermas - from which you picked up intersubjectivity - he bought the notion from Piaget, not about intersubjectivity, but that of being born egocentric having to be socialised into taking the perspectives of others.

Trevarthen: Everybody believed that. But I love this *eggo sentric*. I think that is a great. The baby was an egg: Eggo centric!

(Laughter)

Stensæth: The egg is always in the centre!

*Co-
operation,
from the
very be-
ginning*

Trevarthen: That's a female supremacy. There is one very funny example of that brought to my attention by Jonathan Delafield-Butt. In 2006, I, with Jonathan, Ken Aitken, Marie Vandekerckhove and Emese Nagy wrote a huge review in "Child Psychopathology". The editor, Dante Cicchetti, had asked me to review regulation and stress "from conception to the age of 2". And I thought: *I can't possible do that?* So I recruited those four young people to work for me and they were all extremely brilliant, being experts biology and neuroscience. We ended up writing a chapter on development from conception with *** references. Jonathan found this fact of human biology. Sperm motility is probably a minor factor in the fertilization process. Sperm are found in the oviduct within 30 minutes of deposition, a time "too short to have been attained by even the most Olympian sperm relying on their own flagellar power". The sperm appears to be carried to the oviduct by the woman's uterine muscular activity. He can only swim about three millimetres.

(Laughter)

Trondalen: That's funny!

Trevarthen: And by the way that item introduced the theme of the whole chapter, which is 'co-operation'. Every advance in development has to be co-operative! An intense co-operation between the male and the female body leads the sperm and the egg to co-operate, then all the cells of the embryo co-operate with each other, and with the mothers' body and make a placenta, and so on and so on, and finally the baby is born; from birth children co-operate with willing parents and family, and then they go to school and they co-operate with the education system and...

Stensæth: ...the world at the end!

Trevarthen: I was invited to a conference with Endel Tulving, Harald Welzer and Hans Markowitsch, all interested in how the human brain remembers and which parts appear to be essential. Tulving spoke about his conception of our personal narrative history, self-creation and self-knowledge or 'autonoesis'. I wrote a chapter for the book of the conference about the baby as a narrator of an autobiography, who shares the creation of his or her life's meaning, and learns its cultural meaning. That paper is, however, only published in German.³² I think Tulving's distinction between episodic memory made by a person in the course of action and semantic memory, which deals with outside facts helps us understand why we cannot speak easily about what an infant may experience, about what Marie Vandekerckhove and Jaak Panksepp call 'anoetic consciousness'.³³ I think they are really different systems in the brain. And there is no question at all that the clarity of declarative, spoken experience is dependent upon more personally felt episodic experience. I believe that personal narrative history is also important for animals. Animals form their social co-operation as a result of bringing together their personal narrative histories. In highly social species, somebody takes charge of educating the young. In most cases it is the females, the mothers. The males rush off and have their own activities, mostly exploring, hunting and fighting. But the females take care of the young, as is the case for red deer in Scotland.

32 Trevarthen, C. (2007). Wer schreibt die Autobiographie eines Kindes? In Harald Welzer & Hans J. Markowitsch (Hrsg./Eds.), *Warum Menschen sich erinnern können. Fortschritte der interdisziplinären Gedächtnisforschung*. Stuttgart: Klett-Cott, pp. 225-255.

33 Vandekerckhove, M., Panksepp J. (2011). A neurocognitive theory of higher mental emergence: From anoetic affective experiences to noetic and autonoetic awareness. Review Article. *Neuroscience & Biobehavioral Reviews*, 35(9), pp. 2017-2025.

Females teach the young how to move about the hills! Elephants do the same, passing knowledge on through the generations about the migration routes to find water and food, from mothers and grandmothers to juveniles. Horses and rhesus monkeys learn social manners with their mother's help, before they explore relationships with peers. The adult males of such animals are often on their own, out on a limb, anxious.

(Laughter)

Stensæth: We have to close up. Maybe a final question: How do you think about the idea on writing a book on children, music and health? Do you think it is a good idea? Health here is as wellbeing; the relationship between music, children and wellbeing?

*Children,
music,
health*

Bråten: It's a wonderful idea. How are music and muse related?

Trevarthen: The muses, the goddesses of legendary arts and knowledge, were inspired by the flowing rhythm and affecting sounds of music. Actually you must look into that family, because muses had different characters, and different occupations.

Trondalen: Yes, nine different...

Trevarthen: You must be careful with this, because the behaviour of mythical gods and goddesses was often self-indulgent, or immoral. These Gods... They were very human.

(Laughter)

Bråten: I think it's a wonderful title (Children, music, health).

Trevarthen: What do you expect to find as key words in that book with that title? What would be the main concepts? *Vitality* probably?

Stensæth: *Vitality*. That's an important health issue.

Trevarthen: And *moving*?

Stensæth: Movement, yes.

Trevarthen: Feeling, of course...

Stensæth and Trondalen: Yes!

Stensæth: Creativity, maybe...

Bråten: I would hope also that in that book would appear the e-motional memory, i.e. notion of memory out of movement, which is a kind of bodily memory. You asked me if I had some additional points when I told you about... the only thing I would say is from that point when I presented the notion of the inborn virtual other I began infant research, and soon after that also comparing infant-adult interaction in humans and apes, so that was from that time I had to turn evolutionary also. If you come with such a strong statement, being born with a virtual other in mind, I had to try to find how the evolutionary path could have been...

Trondalen: I do remember that from your lecture in March 1997. Yes, I remember the overheads you used.

Bråten: Do you? Ok. Thank you.

Trevarthen: I recently was asked to write an epilogue for a book on embodied movement. And I became interested in the difference between the words 'motion' and 'movement'. I went back to Latin grammar and found that all the words beginning with M O T are passive or in the past. All the words are beginning with M O V, from 'movere', 'to move' are active. In the present and future tenses³⁴...

34 This is complemented by Trevarthen (2012): "Rich meanings stored in language, understandings of this vital difference, may be found by checking the relationship between spelling and grammatical function in forms of the Latin verb *movere* (as in *moveo*, 'I move'), in contrast with parts corresponding to *motus sum* ('I have been moved'). All active, present and future tenses of this verb, and the gerundive (about 'doing something', e. g. by 'moving', *movendi*) begin with *mov*. All passive and pluperfect parts begin in *mot*. The clear distinction made by the two consonants, 'v' and 't', is between words for actions in the present or future brought about by will and intention, which begin in *mov*; and those signifying the imposed, done, not longer active as in 'had moved', these words begin in *mot*. The sounds of the words 'express' differences in human will or submission. This fits with the meaning of 'moving' as intended animal activity by an agent; and 'motion' as a physical displacement of a body that implies no intention, intention and that is perceived as an inanimate, physical event in abstract 'scientific' space and time." (Trevarthen, C. (2012). Epilogue: Natural sources of meaning in human sympathetic vitality. In A. Foolen, U. M. Lüdtke, T. P. Racine and J. Zlatev (Eds.) *Moving Ourselves, Moving Others: Motion and Emotion In Intersubjectivity, Consciousness and Language*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 451-483).

Stensæth: Very interesting!

Trevarthen: So that's why it is an important verbal distinction for psychology. E-motive is too passive and past; it has to be something like E-moving... Sorry, I don't know how to express it elegantly. 'Movement' it has to be.

Stensæth: Movement is life.

Trevarthen: Yes, and it is active, in the present and for the future.

Bråten: I see your point. Very important!

Trevarthen: So I think it has to do with the sound of the words as they are spoken. The 't' of 'motion' is too sharp. Move, the 'v', is more rich and sensuous. It is poetic. Anyway, insistence on the proper, original use, of words is a futile task, bound to be ignored, just the same as my battle against misuse of the word 'empathy'. We will have to use the word 'e-motion'. Our language is so impressed by *regulation*, *rules* and *structure*. I am suspicious of any word derived from 'structure', 'to build or put together': *instruct*, *construct*, *deconstruct* ... They are all too busy.

(Laughter)

Trondalen: Maybe you have been a little bit regulated during this course?

(Laughter)

Trevarthen: No..

Trondalen: No?

(Laughter)

Trevarthen: Moved! I have been greatly moved. I haven't been dis-regulated much either.

(Laughter)

Stensæth: Thank you very, very much!

References:

- Bakhtin, M. (1981). *The Dialogic Imagination*. Austin, TX, University of Texas Press.
- Bateson, M. C. (1975). Mother-infant exchanges: The epigenesis of conversational interaction. *New York Academy of Sciences. Annals* (263), pp.101-113.
- Bråten, S. (Ed.) (1998). *Intersubjective Communication and Emotion in Early Ontogeny*. Cambridge: Cambridge University Press.
- Bråten, S. (2000). *Modellmakt og altersentriske spedbarn. Essays on Dialogue in Infant & Adult*. Bergen: Sigma forlag AS (www.stein-braten.com)
- Bråten, S. (2007). *On Being Moved: From Mirror Neurons to Empathy*. Amsterdam/Philadelphia: John Benjamins Publishing Company
- Bråten, S. (2009). *The Intersubjective Mirror in Infant Learning and Evolution of speech*. Amsterdam/Philadelphia: John Benjamins Publishing Company
- Bråten, S. (1997, March 4). *What Enables Infants to give Care? Prosociality and learning by alter-centric participation*. Paper presented at The Centre for Advanced Study, The Norwegian Academy of Science
- Buchler, J. (ed.) (1940) *The Philosophy of Peirce: Selected Writings*. London: Routledge and Kegan Paul. [Republished in 1955 as: *Philosophical Writings of Peirce*. New York: Dover.].
- Davidson, J. and Malloch, S. (2009). Musical communication: The body movements of performance. In Malloch, S. and Trevarthen, C. (Eds.) *Communicative Musicality: Exploring the Basis of Human Companionship*. Oxford: Oxford University Press, pp. 565-584.
- Davidson, J.W. (2001). The role of the body in the production and perception of solo vocal performance: A case study of Annie Lennox, *Musicae Scientiae*, 5(2), pp. 235-256.
- Donaldson, M. (1992). *Human Minds: An Exploration*. London: Allen Lane/Penguin Books.
- Foolen, U. M. Lütke, T. P. Racine and J. Zlatev (red.) *Moving Ourselves, Moving Others: Motion and Emotion In Intersubjectivity, Consciousness and Language*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 451-483
- Fónagy, I. (2001). *Languages Within Language: An Evolutionary Approach*. Amsterdam/Philadelphia: John Benjamins
- Gallese, V. & A. Goldman (1998). Mirror neurons and the simulation theory of mind-reading. *Trends in Cognitive Neuroscience* 2 (12)
- Halliday, M. A. K. (1975) *Learning How to Mean: Explorations in the Development of Language*. London: Edward Arnold

- Habermas, J. (1981) *The Theory of Communicative Action, Volume 1, Reason and the Rationalization of Society*. Toronto: Fitzhenry & Whiteside Limited
- Jeffress, L. A. (ed.) *Cerebral Mechanisms in Behavior*. New York: Wiley.
- Kirkebak, B. (2007) Reaching moments of shared experiences through musical improvisation: An aesthetic view on interplay between a musician and severely disabled or congenital deafblind children. In: S. Bråten (Ed.) *On Being Moved: From Mirror Neurons to Empathy*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 269-280.
- Lashley, K. S. (1951). The problems of serial order in behavior. In: L. A. Jeffress (ed.), *Cerebral Mechanisms in Behavior*. New York: Wiley, pp. 112-136.
- Lord, C., Risi, S., & Pickles, A. (2004). Trajectory of language development in autistic spectrum disorders. In M. L. Rice & S. F. Warren (Eds.), *Developmental language disorders: From phenotypes to etiologies*. Mahwah, NJ, US: Lawrence Erlbaum Associates, pp. 7-29
- Malloch, S. (1999) Mother and infants and communicative musicality. In: Rhythms, Musical Narrative, and the Origins of Human Communication. *Musicae Scientiae, Special Issue, 1999-2000, Deliège, I., ed. Liège, Belgium: European Society for the Cognitive Sciences of Music*, pp. 29-57.
- Malloch, S. & C. Trevarthen (2009). *Communicative Musicality. Exploring the basis of human companionship*. New York: Oxford University Press
- Merleau-Ponty, M. (1945) *Phénoménologie de la Perception*. Paris: Gallimard
- Pierce, A. (2007). *Deepening Musical Performance through Movement: The Theory and Practice of Embodied Interpretation*. Indiana: Indiana University Press
- Reddy, V. (1991) Playing with others' expectations; teasing and mucking about in the first year. In: A. Whiten (Ed.) *Natural Theories of Mind: Evolution, Development and Simulation of Everyday Mindreading*. Oxford: Blackwell, pp. 143-158.
- Reddy, V. (2008). *How Infants Know Minds*. Cambridge MA: Harvard University Press.
- Russel, B. (1961) *History of Western Philosophy*. London: George Allen & Unwin.
- Ryan, J. (1974). Early language development: Towards a communicational analysis. In M. P. M. Richards (Ed.), *The Integration of a Child into a Social World*. London: Cambridge University Press, pp. 185-213.
- Schögler, B. & C. Trevarthen (2007). To sing and dance together: From infants to jazz. In S. Bråten (Ed). *On Being Moved: From Mirror Neurons to Empathy* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 281-302.
- Sherrington, S. (1940). *Man On his Nature*. Cambridge: Cambridge University Press.

- Stern, D. N. (1971/1985/2000). *The Interpersonal World of the Infant*. A View from Psychoanalysis & Developmental Psychology: Basic Books.
- Stern, D. N. (2010). *Forms of Vitality: Exploring Dynamic Experience in Psychology, the Arts, Psychotherapy, and Development* Oxford, New York: Oxford University Press.
- Trevarthen, C. (1974). Conversations with a two-month-old. *New Scientist*, 2 May: pp. 230-235
- Trevarthen, C. (1980). The Foundations of Intersubjectivity: Development of Interpersonal and Cooperative Understanding in Infants. In D. R. Olson (Ed.), *The Social Foundations of Language and Thought*. New York: Norton, pp. 316-342.
- Trevarthen, C. (1985). Facial Expressions of Emotions in Mother-Infant Interaction. *Human Neurobiol.*(4), pp. 21-32.
- Trevarthen, C. (1998a). The concept and foundations of infant intersubjectivity. In S. Bråten (Ed.), *Intersubjective Communication and Emotion in Early Ontogeny*. Cambridge: Cambridge University Press, pp. 15-46.
- Trevarthen, C. (1999). Musicality and The Intrinsic Motive Pulse: Evidence from human psychobiology and infant communication. *Musicae Scientiæ. Escom European Society for the Cognitive Sciences of Music* (Special issue 1999-2000), pp. 155-215.
- Trevarthen, C. & Malloch, S. (2000). The Dance of Wellbeing: Defining the Musical Therapeutic Effect. *Nordic Journal of Music Therapy*, 9(2), pp. 3-17.
- Trevarthen, C. (2007). Wer schreibt die Autobiographie eines Kindes? In Harald Welzer & Hans J. Markowitsch (Hrsg./Eds.) *Warum Menschen sich erinnern können. Fortschritte der interdisziplinären Gedächtnisforschung*, Klett-Cott, pp. 225-255.
- Trevarthen, C. (2012). Epilogue: Natural sources of meaning in human sympathetic vitality. In A. Foolen, U. M. Lüdtke, T. P. Racine and J. Zlatev (Eds.) *Moving Ourselves, Moving Others: Motion and Emotion In Intersubjectivity, Consciousness and Language*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 451-483.
- Vandekerckhove, M., Panksepp J. (2011). A neurocognitive theory of higher mental emergence: From anoetic affective experiences to noetic and auto-noetic awareness. Review Article. *Neuroscience & Biobehavioral Reviews*, 35(9), pp. 2017-2025.
- Whitehead, A. N. (1929/1957). *Process and Reality*. New York: Harper & Row.