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Observing infant communication
What it may teach adults

Jeannette van der Stelt

“The child is moving his face, his lips and tongue, his arms and hands and his whole body, and the movements are directed towards his mother: he is addressing her, and she is ‘receiving’ him. Simultaneously, she is addressing him with sounds and gestures of her own and he is receiving her.”

(Halliday, 1979, p. 171)

Part 1: It is your instrument, baby: explore!

Introduction
Young parents (“young” is not necessarily related to their actual age but to their new role as an adult) nowadays are usually fascinated by the communicative competence of their very young children; let us say children of less than two years of age. Proud mothers and fathers report remarkable milestones in the development of speech production and comprehension of their baby. Having studied infant speech development for more than 30 years, the stories of parents still can amaze me. Often I cannot answer their specific questions: speech development is a very complex process, which seems to proceed along different paths. And most of the time, children learn to talk in a rather short time.

In the Institute of Phonetic Sciences of the University of Amsterdam, we had already a tradition of studying speech development. Louise Kaiser, the first Dutch professor in Phonetics, had gathered in the 1930th parental reports on young children’s sound productions (of course written down alphabetically).

In 1975 portable methods for sound recording permitted us to audio record young children, even in home situations. Two boys and their mothers were audio taped weekly (up to 8 months of age) during naturalistic every-day-situations and these tapes were to be analysed with the help of students. Our leading principle was that we had to do with pre-linguistic children and thus we sought an alternative for the alphabet (or the International Phonetic Alphabet, which is closer to the sound, but as a tool at the same description level). At that time, our leading question was: “What are infants doing when they produce sounds? No, not the vegetative ones, the ones we can interpret and imitate at will. Those sounds will become speech sounds”.
Transcribing infant sounds

Long-time, in literature a newborn baby’s sound production is said to be crying to express hunger or pain. Around three months these sounds have changed in the much more agreeable “cooing” sounds, or “pleasure cries” as Wasz-Hockert and colleagues described them in their 1968 acoustic study. However, in 1975 we knew already that in African cultures very young infants rarely cried. Western infants, due to cultural and educational peculiarities, had to cry when expressing their needs. Their mothers usually were at a certain distance! We decided to ignore the cry sounds in our recordings. Looking back now, that was a decisive step in the development of our transcription system and our present approach of the field.

As phoneticians trained in the segmental tradition, we started to look for sound segments on the tapes that we had recorded from the two boys. While listening to such a segment however, we lost the distinction between cries and non-cries. In the young baby, an audible inspiration preceding the expiratory sound appeared to be crucial for the “real-cry” category. We had found a physiological way for segmenting the infant’s sound stream: the respiratory cycle. A segment of a shorter duration risked to be misinterpreted.

An infant non-cry utterance thus is defined as an expiratory sound production that ends at the moment of inspiration. Duration of an utterance thus varies with the inspiration-expiration cycle.

A next, logical step because fitting in with the level of description, was our focus on phonation characteristics. Glottal stops and aspirated voicing have to do with closure of the vocal folds. Rising or falling intonations result from a subtle interaction between the muscular tension of the closed vocal folds and the sub glottal air pressure. One single utterance is sometimes completely phonated; at other times phonation is interrupted. All these movements can be considered as alternations of the primary function of the larynx: protecting the lungs for the things we swallow and inhale.

Like for all mammals, the human mouth is primarily meant for feeding: sucking, chewing, and swallowing. In newborn babies it functions during crying and phonation as a resonator in no matter what position. So we did not bother about “vowel quality”: the mouth haphazardly was more or less open or not. But, human adult speech sounds result from a very subtle coordination of phonation and articulatory muscle movements. Mandible, lips, tongue, uvula and velum can change the shape of the resonator.

So the transcription method is based on the physiology of sound production. In this manner we eliminated as much as possible the adult ear and prejudiced adult perception, which is prompting bias in description of infant sounds due to training with the alphabet system.
Results
We found a physiologically developmental process underlying sound production in the first year of life. In the first year of life, infants systematically master the coordination of movements that enable them to become articulated persons. The successive speech motor milestones are graphically represented in Figure 1.

The respiration cycle, meant to keep you alive, gradually is controlled for speaking. The expiration phase can be prolonged, while the inspiration can be swift and deep.

Speech motor milestones
Voice control is tightly related to changes in respiration since vocal fold vibration depends on the sub glottal air pressure. The form and the openness of the oral and nasal cavity are more or less haphazard: the infant younger than three months does not change the resonator. All attention seems to be on phonation.

The control over the closure of the vocal folds is thus the first thing that the infant tries to gain. A simple form of multiple-syllable-production is possible from about 6 weeks onwards. That can be a glottal series of /u-u-u/-sounds or an aspirated part in an utterance /aha/. In Dutch, both sounds have a clear communicative function, especially in teaching situations. The /u-u-u/ means to stop a person to proceed his/her actions, the /ahaa/ (depending on the intonation) expresses a large scale of meanings that have to do with mutual understanding. The ability to interrupt the vocal fold vibration is basic in a consonant-vowel-consonant-vowel (cvcv) sequence where the consonant is voiceless, as in “papa” for example.

Tension of the vocal folds in relation to the sub glottal pressure is the next step in phonation control. A four-months-old baby is exploring its vocal possibilities in its extremes: glissandos, growls, diplophone sounds, and loud and creaky voices. These aspects will serve in adult intonation patterns that express all subtleties of emotions.

Articulatory control follows the general laws for neurological development; from the central spine to the periphery, and from global to precise. We found that 3-months-old babies actively start to use their articulators to change the filter function of the oral cavity. They produced a uvular roll during a voice utterance, which sounds as /aaRRaa/ almost meaning “funny one” in Dutch. The tongue root and the velum also could be brought closer to each other and then it sounded like /achh/, the well-known Dutch unspeakable consonant. Typical for this age is that the baby can only manage to produce one articulatory movement per utterance.

Then comes the moment that many parents report: my baby says “papa” or “mama”, the universal word! Hopefully, you can understand at this point that this milestone is the result of about six months sports school training in daily voice and articulation control from the part of the baby. The duration of the
phonated utterance now is long enough to permit the infant to produce at least two articulatory movements (see Figure 1, point 6: Babbling sounds).

Gradually, the infant comes to understand that sounds have a fixed meaning related to specific situations. The child starts to produce (most of the time) one-syllable sounds that resemble adult words: /ba/ for “bal”. These sounds are called Phonetically Consistent Forms or (proto) words.

**Basic training summary**
We think that around the age of six or seven months, the majority of the infants have mastered the basic principles for the production of speech sounds. Further development is a matter of more ability in playing the instrument. And, of course, in liking to play it in more complex situations and at the right moment and with the desired effect: applause.

The infant needs a didactic program for that, and the name of that program is “Mama-Papa”. As a matter of fact, “she” was before birth the baby’s food, disco, warmth, motion, excitement, and relaxing sleep. After birth “she” also becomes the baby’s hunger, silence, distress, and boredom. “He” can replace “her” in every way, and especially in motion and excitement.

As Berry Brazelton (Brazelton & Tronick, 1980) puts it, the baby is in the “envelope of caring parents”. They offer a balanced program for the baby’s senses and exploratory movements.

Jeannette van der stelt in her study (photo 2005 by Diana Apoussidou)
Schematic overview of the speech motor milestones

phonation is indicated by __________
articulation is indicated by __________
loudness variation by __________

1. Laryngeals
   a). __________
      glottal stop
   b). ______ h
      aspirated
   c). __________
      interrupted phonation
   d). ______ ! ______
      combinations of interrupted phonation
       with glottal stops and aspirated voice
   e). h______ !
       h______

2. Simple articulations
   a). __________
      articulation with interrupted phonation
   b). __________
      articulation with an uninterrupted phonation
   c). __________
      onset with an articulation
   d). __________
      articulation at the end of a sound production

3. Prosodic sounds
   a). __________
      rise-fall intonation
   b). __________
      fall-rise intonation
   c). __________
      complex intonation
   d). __________
      rise-fall intonation + loudness variation

4. Babbling sounds
   a). __________
      two articulations with interrupted phonation
   b). __________
      two articulations with uninterrupted complex intonation

5. Phonetically Consistent Forms (PCF) or Words
   a). __________
      monosyllabic word “bbaaa!”
   b). __________
      bisyllabic word “upappaa?”

Figure 1. The six landmarks in the speech motor development during the first year of life, as described by Koopmans-van Beinum & Van der Stelt (1979, 1986). Figure adapted from Van der Stelt, 1993.
Part 2: You are playing, I am the audience

Introduction
Seen in a historic perspective, psycholinguistics have dominantly claimed the domain of speech development, indicating the earliest period of communicative development as “pre-linguistic” since sound-meaning criteria were not yet met by the infants. The 6-months-old child is reported to say “papa”, but is obviously not referring to that “person with the moustache”.

Towards the end of the 70th this linguistic approach however changed, and I was very happy with that. Margaret Bullowa focussed scientific attention upon the precursors of speech communication, as did Colin Trevarthen (1979) with the introduction of terms like “primary and secondary intersubjectivity”. Since Piaget proposed his theory of infant psychological development “intentionality” was thought to be present only after the 9th month. With the increased number of observational studies by means of video recordings intentionality became a possible motive in the behaviour of infants younger than six months. Studying the communicating dyad, and their subtle interaction, resulted in a huge pile of books and publications that had a behavioural and/or social point of view. The onset of speech development drifted from two-years-of-age in the 20th to before birth nowadays.

The communicative approach of the developmental process, using audio and video recordings, also necessitated new research methods as a replacement of the paper-and-pencil for alphabetic and behavioural description. In 1984 a huge research proposal of our Speech Development Group was granted (Koopmans-van Beinum, et al., 1990). We recorded the communicative development of 6 normal and 12 cleft-palate infants and their mothers from birth to two-years-of-age. The pairs were videotaped monthly in naturalistic home situations by means of two synchronized cameras. The split-screen images permitted us to analyse the interaction of both mother and baby to the millisecond. But: “What is communicative behaviour in a mother-infant pair when the baby is 2 weeks old? Can that be related to later behaviour? Have mother-baby pairs initially their own body language?”

Transcribing communicative behaviour
Describing behaviour had already been a solidified tradition in The Netherlands, honoured with the Nobel Prize for Nico Tinbergen in 1973, when we started this research in 1984. One of the rules is that during the observation period, you may not change the content of your behavioural dictionary.

In line with the transcription system for baby sound production (see Part 1. based on coordination of respiration, phonation and articulatory movements in the individual), we developed a transcription system for the mother-infant dyad. Pilot studies had given an indication of what we could expect with regard to occurring behaviour at the ages studied. Since we realized that beforehand you
do not know which behaviour is going to “work” communicatively, we decided to attend to all movements. Impossible of course, you will say, but we managed to define a behavioural dictionary that was applicable for the first two years of mother and child, and for both persons involved (Van der Stelt & Jansonius-Schultheiss, 1990).

This dictionary was only the result after a lot of discussion during video observations with my colleagues, for sure. I pleaded for leaving out the (complicating) assumptions about the child having a “memory”: that possibly could be a result from analysis of the occurring behaviours over the various months. We ended up with a 16 channel-200 codes system. In the channel “head movements” V was used for a ‘vertical movement of the head, raising or lowering’, for example. The transcription of five minutes interaction took about 8 hours, and “only” 8 hours thanks to specially developed equipment by our electronic department for direct code+time registration in a database.

Per recording, per channel, and per person a ‘protocol file’ was constructed, with onset- and offset-times for each code. These timings were found by means of slow motion display of the videotape. The 16 files (one per channel) are then transformed to ASCII files and served as input for database software. Of course all files started at the same frame number of the videotape.

The amount of time involved in analysing mother-infant interaction in this manner may seem disproportionate. Because afterwards you have to come to a sensible synthesis of what you broke up. The interpreting adult in this manner is eliminated as much as possible, and notions like “initiative” must be formalised as well.

We developed a model for the transmission of movements between mother and infant (Van der Stelt, 1993, see Figure 2). “Output” of a person are the movements in the various channels. These movements, the “input” for the other person, are primarily processed by the eye, the ear, and by touch (the senses). The sensory-motor transmission between two individuals is limited, since both do not perceive all movements of the partner. The partner only perceives eye movements, like a change in gaze direction, when he or she is looking at the face of the partner.

Certain communicative movements, such as an eyewink, likely occur when the receiver is looking at the sender’s face. An eyewink thus is only produced under the communicative condition that the partner is ready to receive the message. Below, I will discuss the channels that, in my opinion, are for sure involved in basic human communication.

**The gaze channel**

The gaze direction of both the mother and the infant was transcribed separately by means of 6 codes for “looking at the face of the partner”, “looking at the body or hands”, or “looking at an object”, “looking around”, “looking at another person in the room”, and “eyes are closed”. When both mother and baby were
looking at the face of the partner, there was face-to-face contact. A change in gaze direction is transmitted to the partner only when that partner is looking at the face. We could also check who started to look at the face of the partner, and who made the contact or broke it off.

**The channel for mimical movements**
Mimical movements included “smile or laughing face”, “eyebrows raised or questioning face”, “cry face”, “frowning”, “exaggerated mouth and tongue movements”, and a code for “neutral face”. Changing facial expression is transmitted when the partner is looking at the face.

**The speech channels**
For mother and baby the speech channel was different, obviously. The baby’s sound productions included categories that we already used for the transcription of infant sound production (see part 1). We only refined the categories with regard to aspects of intonation patterns (simple pattern versus a more complex intonation).

The categories we used for the mother’s speech were “concerned with the infant’s sound production, imitation included”, “about the infant’s movements”, “about the mother herself”, “about situations”, and a category “variety of sounds” which included games and rituals. Of course we also needed a category “adults talk”. Sound productions are always reaching the partner, even when the listener is at some distance. Speech movements are seen when the partner is looking at the face.

The other channels in the transcription system are head movements, body movements, leg movements of the baby, and hand/arm movements. Further, we noted whether the mother or the infant touched one another and specified where on the body.
Sensori-motor transmission model for mother-infant interaction

Figure 2. Sensori-motor transmission model for movements and perception of the movements by the respective partners (Van der Stelt, 1993). Movement channels are indicated in the blocks, the perception in the ovals. The drawn lines indicate connections that are discussed in this article. Figure adapted from Van der Stelt, 1993.

The synthesis of the coded behaviours
The coded movements in the sixteen channels can be combined to more complex behaviour patterns. A smile for example, can be with or without sound. By checking the mimical movements for “smile face” together with the sound
production channel for “laughing”, we can decide about the quality of behavioural pattern “smiling”.

The behavioural score is comparable to the score of a musical composition, which prescribes the musician what must be done at a certain moment. The transcribed movements have their place in time, they have duration, a position in the sequence of movements per channel, and a position in relation to the movements in the other channels as well. The sensori-motor transmission model (Figure 2) can be helpful in defining patterns in mother-infant interaction.

Kerkhoven (1989) constructed a software program that enabled inspection and manipulation of the database in various ways. Firstly, it provided a graphical representation of the transcribed data to enable visual inspection. Secondly, the program offered the possibility to select specific channels and codes from the database (see Figure 3), and thirdly, the duration and frequency of occurrence of (combined) behaviours can be calculated. Fairly simple statistical programs that calculated the numbers of the occurring movements and percentages of time per 5 minutes transcribed recording, were used for further statistical analyses.

Nowadays, very advanced programs are commercially available for ethological research, pattern detection and statistical analyses. We had to develop our own software step by step, and that forced us to realize why and how we wanted the various analyses.

**Basic features of human speech communication**

Bullowa (1979) pointed at the prerequisites for mother-baby communication that develop well before the baby produces his or her first word. Intersubjective tuning, transmission of intentions or “meanings”, and turn taking are considered to be basic for speech communication in general.

**Intersubjectivity**

We interpreted “intersubjectivity” as the evidence that mother as well as the infant is aware of the presence of the partner. In our database we assumed that this was the case in the visual domain when both mother and baby were looking at the face of the partner: face-to-face contact. In the auditory domain intersubjective tuning was regarded to be established when the two persons involved were making sounds simultaneously: vocalisations in unison usually indicate a close bonding. Closely connected persons do not cry or laugh together in alternation. So, by checking the sound production channels for mother and baby, we could decide about the moments that they were “talking at the same time”.

Of course, simultaneous sound production during face-to-face contact is a very obvious example of intersubjective tuning via the visual as well as the auditory modality.
Recording 2, Fanny-SUSAN, 2 months 4 days, afternoon 16.00 hours.  
Onset time transcript frame number 10045: time 16.11.06

<table>
<thead>
<tr>
<th>time</th>
<th>C</th>
<th>IV</th>
<th>IM</th>
<th>IH</th>
<th>IS</th>
<th>comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>s</td>
<td>h</td>
<td>h</td>
<td></td>
<td>looking mother face + smile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>glottal stops</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>horizontal head movement</td>
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<td></td>
<td></td>
<td></td>
<td>‘aarruhh’</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td>horizontal head movement</td>
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<td></td>
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<td></td>
<td>e</td>
<td>v</td>
<td></td>
<td>‘aarruhh’</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>eye brows raised + glottal stop</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>looking mother face</td>
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<td></td>
<td></td>
<td>head bows down</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>‘aarruhh’ + rising tone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>f</td>
<td>v</td>
<td>looking up head movement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>laryngeal sound + frown</td>
</tr>
</tbody>
</table>

Figure 3. Fragment of a transcription of infant behaviour (baby Fanny) that occurred in the second recording (2 months old). IV is the visual channel for the infant (f is the code for looking at the face of the mother). IM is the channel for infant mimical movements (s is the code for smile face, e for eye brows raised, and f for frowning). IH is the channel for infant head movements (h indicate a horizontal head movement, v is used for a vertical movement of the head). IS is the channel for transcribing the infant’s sound production. The codes in that channel are given in the comment column (‘aarruhh’, for example). 
C is a new file constructed to store predefined behavioural patterns of the baby, in this example all the moments that the baby is looking at the mothers face (IV; f) together with sound production (IS). The baby has produced 7 utterances, and 6 of them occurred while looking at the mother’s face (given in the C file). Figure adapted from Van der Stelt (1993).

**Intentionality**

Intentions are considered to be expressed by sound productions and by mimical movements (sometimes in co-occurrence with head movement) during face-to-face contact. At that moment the partner of the sender is receiving a message
that he or she must interpret. We have restricted intentional messages to the moments that at least two simultaneous movements occur during face-to-face contact. For example, a baby’s sound production is only regarded to be intentional when it is produced during “looking at each other’s face”.

We have distinguished three kinds of intentions:
1. Visual intentions are composed by simple movements in the mimical and the head movements’ channels while face-to-face contact is present. When the mother is moving her head towards the baby with a big smile on her face, and while they are looking at each other, this is considered to be a clear visual intention of the mother that the baby cannot but receive.
2. Audible intentions occur when either mother or baby are producing a sound during face-to-face contact: the sound production not only is transmitted via the auditory channel, the mouth movement is seen as well.
3. A combination of a visual and an auditory intention do occur in early mother-infant interaction fairly often. While looking at each other, mother and baby exchange a lot of messages by means of many channels: visually, audibly, and by means of touch, for example.

Baby drinking water out of its mother’s hand (Kerala, India, photo Johannes Odé)

**Turn taking**
Assuming that the mother has an inuitive didactic programme in mind (to teach her baby to speak), we have looked at her preference for responding to her infant’s sound productions. Some sounds may urge her to respond, other sounds she may chose to neglect. Further, her selective behaviour may change with the
baby’s progression towards the adult speech level. “Primitive sounds” more and more will be neglected in favour of “real words”.

We have checked whether the mother felt the need to respond to the speech motor milestones (see Figure 1) or not. Further, we have set a time lapse: the mother was to react within (a fraction of) a second.

All monthly recordings of two mother-daughter pairs have been analysed by means of the behavioural transcription system, and data are resynthesized according to the fundamentals of basic human speech communication.

Results

Intersubjectivity

We have compared the results on intersubjective tuning of the two mother-infant pairs, and these results appeared to be different (e.g. Van der Stelt, 1993). In Claire and mother EVE, the presence of face-to-face contact was systematically less frequent than in the other pair (Fanny and mother SUSAN). Simultaneous sound production was more frequent for Claire and EVE, but only in the first five recordings. The frequency of vocalisation in unison during face-to-face contact appeared to be higher for Claire and EVE in the first five recordings, and lower than for Fanny and SUSAN after five months of age. The impact of these differences indicates that Claire and EVE used the two channels (visual and sounds) more selectively than Fanny and SUSAN who preferred to continue using the channels simultaneously. In a book-reading situation for example, Claire and EVE no longer looked at each other. Visually they focussed on the pictures, and purely audibly the pictures were labeled. Fanny very often had to look at her mother’s face for understanding what she may mean. SUSAN said that Fanny did not like book reading.

Intentionality

The two mother-infant pairs were compared with regard to the three forms of transmitted intentions. Intra-pair comparisons were made because the mother is expected to transmit more audible intentions to the infant than the infant to the mother. Inter-pair comparisons of the mothers and the infants were also made: do the infants send their respective mothers about equal numbers of messages?

1. The number of visual intentions is not different for the partners in one pair. However, comparing the children showed that Claire transmitted more visual intentions to her mother than Fanny did to her mother SUSAN. EVE transmitted more visual intentions to daughter Claire than SUSAN to Fanny, but this difference was not yet significant in the first five months.

2. As was expected, the mothers transmitted significantly more audible intentions to their daughters than the children to them. The children amongst them did not differ. The two mothers did not differ with regard to the number of
audible intentions, but they did with regard to the total duration of those audible messages. EVE’s face-to-face sentences were much longer than SUSAN’s.

3. The combined visual-audible intentions were transmitted comparably in the two pairs. But EVE systematically used especially the combined channels for transmitting messages to Claire. In general it can be said that EVE used every opportunity and method to instruct her daughter about speech communication. SUSAN tended to look at her daughter’s face, waiting for Fanny to say or do something.

**Turn taking**

Turn taking by the mothers upon the milestone sound productions of the infants (see Figure 1) is described. These milestones represent on the one hand, the ongoing speech motor development, and on the other hand these sounds resemble increasingly adult speech production.

Both children produce sounds in four groups of sound production: laryngeals, simple articulations, babbling sounds, and PCFs and words. EVE took her turn abundantly when Claire started to make laryngeals and simple articulations in the first five months of life, while SUSAN only took some turns on the (large numbers of the) earliest sounds of Fanny. Feedback on sound productions thus occurred much later for Fanny than for Claire. Fanny continued to produce many babbling sounds throughout the second year of life. Claire very early started to use understandable words. Only when two years of age Fanny used a large amount of wordt in that recording, but in fact she repeated a same word over and over: “brother”, pointing at het little baby brother.

**Conclusion**

Speech therapists tend to blame early interaction when a three year-old child, in absence of clear physical and/or mental handicaps, is delayed in speech development. This study of early mother-infant interaction was partly undertaken to find out whether the mother’s behaviour did influence child speech production.

At three-years-of-age, Claire attended a day care center and was said to be very “talkative”. Fanny had started then a (from time to time uninterrupted) period of 7 years of speech therapy in total, because of articulatory delay. It is tempting to point at the differences between the histories of these two children, especially in the first five months of their lives. Fanny did produce many “simple articulations”, but hardly had any feedback during those first months: she then never noticed (understood) that articulation might be important for her caregiver. Claire received the message that sound production “triggered” her mother over and over again to respond verbally. EVE and Claire quickly maneuvered themselves to a talking relationship.

Psychologically seen, both pairs had a good bonding pattern, but the role of speech communication was quite different. EVE and Claire talked and liked to
talk about whatever came to their minds. SUSAN and Fanny talked mostly for directing each other’s behaviour.

We may conclude that mothers and infants must take their time to orient themselves towards each other. In the development of speech communication, initially, the visual channel is dominant and infant and mother can exploit that channel more or less in similar ways, permitting ideal “speech therapy” situations. The mother and baby attend very much to each other’s face, mimics, and mouth movements. The baby learns to relate seen messages with heard ones, and gradually mutually can exchange them. With regard to the vocal-aural channel, the mother is more or less handicapped when she is only focussed on adult sound production quality in her baby’s sound productions (e.g. Greene, 1963). Responding to sound productions of a baby facilitates speech communication in general.

Mother Mirjam and baby Nora
(Amsterdam, photo W. Wielinga)

Part 3. The synthesis

In a way Part 1 and Part 2 are caricatures: focus is on only a part of the total communicative process, which normally also includes memory, future plans and wishes, and specific sensibilities. But whenever you signal problems in communication, it can be helpful to use a checklist to trace down the causes of the problems.

Below, 10 top rules for “easy talking” age given, for a large part based on many hours of observation, and on the results of analysis and synthesis of data.

1. Take care that you are level with your partner with regard to the eyes.
2. Listen quietly to what your partner is telling you.
3. Give your partner the time to finish, even when you already know how the story will end.
4. Talk with your partner; do not address speech to him or her.
5. Always respond, even when you do not understand everything.
6. You can quietly ask your partner to repeat what he/she just said.
7. Give your partner the opportunity to show you what was meant.
8. Encourage your partner when he/she struggles with complicated problems.
9. Admit that you do make mistakes from time to time.
10. Tell you partner how much you appreciate your mutual contacts.

**Homework**
Choose an “eager and tuned-in student” from one of your classes. Make your intuition about that student explicit by formulating his or her behaviour in terms of communicative fundamentals, like intersubjectivity, intentionality, and turn taking.

**References**

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