

Reading and Writing as Language Acquisition From The First Year of Life

Ragnhild Söderbergh

Abstract

The development and practice of the conceptualization of reading and writing as language acquisition may be traced in research work from the last 30 years. Starting with documentation of children learning from about two years of age, at home, in middle-class families, we later get data from children learning in mixed groups at daycare centers, and children learning from below one year of age. In these settings, the child learns in natural and playful interaction with reading and writing partners, in the same way that he learns his spoken language. This is why acquisition may start as early as before one year of age, as soon as the child is able to share experiences with a partner. Like in the acquisition of spoken language, rituals and games are designed to build on spontaneous acts of sharing, tied to real-life experiences. Here the child's positive emotions are crucial: reading should be done in a spirit of joyful interaction, where reading is never a duty, and where the child's initiative will be paid attention to. With this kind of reading, as soon as children want to write themselves, they are allowed and helped to do so. Data show how, in these natural interactions based on the meaning of written words, children begin to pay attention to the structure of written language all by themselves: the letter patterns within words and the tiny details of letters. While simultaneously observing the sounds of the corresponding spoken words, they eventually break the alphabetic code – find out how letters relate to sounds – and are finally able to read words and texts new to them.

In Sweden, we have been able to demonstrate that this process may start as early as after a few weeks of exposure, even with children who are around one year old when they begin. Thus our experience has turned around the conventional understanding of the reading process: the idea of first acquiring the sound sequences and then attaching them to written form. Instead, the child who is allowed to be confronted with the written language parallel to his early acquisition of the spoken language will analyze and process both modes simultaneously. The kind of reading described here may promote bilingualism and has been successful with deaf children and language handicapped children (Down's syndrome; developmental dysphasia), also promoting their spoken language development. Finally, the relevance of the theories of Lev Vygotskij to our conceptualization and practice of reading and writing as language acquisition is explored.

Introduction

This paper deals with the concept of reading and writing as language acquisition, where children are inculturated into written language in playful interaction with reading and writing partners parallel to, and in the same way as, they learn how to speak. This concept and practice was developed in the late 1960s, and was first presented in works from the 1970s (Söderbergh, 1971; Josic and Savic, 1973; Past, K.E.C., 1975; Past, A.W., 1976; Lee, O.R., 1977; Cohen, R., 1977).

Research work in reading and writing as language acquisition 1965-1999

In 1965, I was an associate professor of Scandinavian languages at Stockholm University, where I had completed a doctoral dissertation on modern Swedish word formation (Söderbergh, 1964). I had a two-year-old daughter whose speech development I was following, eagerly reading what I could find on the subject of children's language acquisition. I came across a provocative book that had just been translated into Swedish, which stated that "Children can read words when they are one year old, sentences when they are two and books when they are three - and they love it" (Doman, 1964). It struck me that, in short, this is the progression of children's oral language development. Doman recommends that you should start by giving the child reading cards with words "near and dear," one word written on each card, in lower-case letters. Very cautiously at first, I started to give my daughter reading cards. Encouraged by her enthusiasm I continued, modifying Doman's "method" according to my recently acquired knowledge of child language development. Also, I changed his rather rigid program of instruction, entirely controlled by the adult, into a playful interaction, where child and adult together construct "the game of reading." In our interaction with written words my daughter made many comments. By carefully analyzing these comments on the reading material - first words, then sentences, followed by little stories and easy picture books, and finally chapter books - during a period of some two years, I got my first insight into her acquisition of the written language.

My long-term case study was documented in "Reading in Early Childhood"(1971). The book was republished in 1977 by Georgetown University Press with a foreword by professors Theodore Andersson, The University of Texas at Austin, and Robert Lado, Georgetown University. It was followed by research work carried out in the United States by students of Theodore Andersson and Robert Lado: a thesis by Kay Past on her daughter Mariana's reading acquisition in English, her mother tongue, and in Spanish (Past, K.E.C., 1975), a doctoral dissertation by Mariana's father Al Past centering on the bilingual aspect (Past, A.W., 1976), and a thesis by Ok Ro Lee on his daughter's bilingual reading in Korean and English (Lee, Ok Ro, 1977). A team of research workers in Novi Sad, Yugoslavia also carried out a study with a class of two-year-old preschool children learning to read in Serbo-Croatian, and with the Cyrillic alphabet (Josic and Savic, 1973). In the 1970s, Dr. Rachel Cohen introduced early reading in France; her research work documented in a series of books (Cohen, 1977; etc.). Later Françoise Boulanger would start her practice with and studies of young children learning to read in French, documented in "Lire à trois ans" (Boulanger, 1992).

In the 1970s I was involved in reading experiments in Sweden with deaf and severely hearing-impaired children; seven of them learning to read at home from an age of two to five years (Söderbergh, 1976a; 1976b) and some 40 children learning to read in preschools for deaf children at the age of five to six (Söderbergh, 1981a; 1985). With the hearing two-to-three-year-olds, one had just been able to latch onto the children's spoken vocabulary: thus, implicitly, the assumption was made that spoken language was a necessary prerequisite of reading acquisition. My studies of deaf children demonstrated, however, that this was not so. One might learn to read even in the absence of spoken language.

In 1987, I organized the 4th International Congress of Child Language at Lund University, Sweden. I was contacted by Assar Thorsjö, head of the Preschool Öjaby Daycare Center in Vaxjö, Sweden, who asked me to help him start early reading at his daycare center. The project, which began as an experiment, has now been integrated into the normal activities at Öjaby, and other daycare centers in the Vaxjö area have followed. Now teachers from daycare centers in different parts of Sweden and in Denmark make study tours to Öjaby and the practice is spreading in Scandinavia (Thorsjö, 1994).

A big step forward was taken in the 1990s when early reading was extended to one-year-olds. This development was - as is often the case - due to mere chance. In 1991, I had been contacted by Maria Wester in Stockholm, a teacher and mother of four girls, the youngest, Nanna, then just one year old. Maria Wester asked me to give her articles and advice on early reading. When Nanna was 20 months old, her mother wrote me a letter saying that she had started to give her daughter reading cards at the age of 14 months. She gave a detailed and precise account of the reading development of this young child, who, before her second birthday, became a fluent reader. At a colloquium on early reading and writing which I arranged at Lund University in 1993, Maria Wester gave a paper documenting her daughter's reading development (Wester, 1994). Assar Thorsjö, who attended this colloquium, then extended his practice at Öjaby to one-year-old children.

In the following years, Maria Wester gave courses to parents, instructing them how to introduce their children to the written language, starting with word cards at an early age, preferably when they had just begun to speak. I had the opportunity to meet parents attending these courses and also to study the development at Öjaby. In this way I collected data from 1-2 year old beginning readers where, so far, I had only collected documentation for children from about two years of age (Söderbergh, 1997). In 1994, I started to give reading cards to my oldest grandchild Agnes, then 8 1/2 months old. Her reading development has been compared to that of Nanna Wester (Söderbergh, 1998a). Also, my second grandchild Hannah used reading cards from the end of her first year of life (Cohen, R. and Söderbergh R., 1999). The analysis of these data has elucidated the phenomenon of reading acquisition as language acquisition where spoken and written language are acquired simultaneously in interaction with speaking, reading and writing partners.

The practice of early reading with immigrant children and language handicapped children

In the 1970s, research work in early reading already included bilingual reading (Past, K.E.C, 1975; Past A.W, 1976; Ok Ro Lee, 1977). From the 1980s there has been a budding interest in early reading to promote bilingualism in immigrant children in Sweden and in Denmark - especially Turkish and Finnish.

Soon research work in early reading inspired its use with children suffering from mental retardation, e.g. in the therapy for Down's Syndrome children by professor Iréne Johansson, Karlstad University, Sweden (personal correspondence). In France, Françoise Boulanger is regularly lecturing to parents of children with Down's syndrome to teach them how to introduce their children to written language as a game in joyful interaction. She has observed that the younger children, four years old, profit most; with nine-year-old children it is more difficult

(personal communication, April 2000). In the 1980's, Professor Renée Behar de Huino was already practicing reading with mentally-retarded children and achieved the best results with the youngest ones, starting by three years of age (personal communication).

In 1992, I received a letter from Dr Xavier Tan, Amsterdam, who wrote as follows: "I am a child psychiatrist who founded the Developmental Dysphasia Foundation in Amsterdam in 1992. The aim of the foundation is to optimize early diagnosis and treatment of developmental dysphasia ... a neurodevelopmental disorder with three characteristics: (1) discrepancy between passive speech recognition and active speech; (2) spontaneous speech that is superior to dialogue on command; and (3) fluency of ideas is impaired. For the last five years we have provided integral group treatment for young children centered on your method of reading. We have been able to prove that in one year the children's speech and language development has improved significantly. Some of the children showed beginning reading abilities. Considering the frequency of treatment was once per week, we found this a great success. The improvement in social behavior has also been remarkable. As far as I know, we are the sole institute in the world where preschool children with developmental dysphasia are treated this way. It is evident that this form of treatment is also an important form of prevention of dyslexia in these children. Some children achieve great reading abilities. One girl of six years could read as a student in the 4th form (9-year-old), yet she still had problems in dialogue. At the start of these groups, most children are still in the 2-word stage, some do not say a word at all" (Söderbergh 1993).

It is evident that much remains to be done, both in research studies and in practice, to explore the possibilities of early reading for bilingualism and for promoting the development of language-handicapped children.

Reading from the first year of life

The practice of early reading and writing as described here is playful interaction between adult and child with written words and phrases. The focus is on the meaning of the words, not on their formal characteristics.

To understand how this interaction may start as early as one year of age, we must keep in mind that the child is involved in learning the written language, as he or she is simultaneously involved in learning the spoken language.

Also, the spoken language is learned in interaction. It is not enough for a child to be surrounded by speakers; they must address themselves directly to the child, using language in real life situations, in meaningful contexts, where reality itself and the actions, gestures and facial expressions of the speakers give clues to the meaning of the words.

The first thing the child learns is interaction and how to interact. Already prenatally provided with the capacity to smile, hear and react to rhythm and tone, with a special preference for the human voice, the newborn baby meets the gaze of his mother and father. From the first weeks of life he starts an interaction in rhythmical body movements, facial expressions and sounds, which becomes more and more sophisticated: the so-called protoconversation, first described by Catherine Bateson, where taking turns is learned (Bateson, 1979).

As has been documented by Colwyn Trevarthen, (Trevarthen, 1977; 1979; Trevarthen and Hubley, 1978), in his minute analyses of interactions between mothers and babies, the child is an active subject with communicative intentions. Thus the interaction is one of intersubjectivity where both child and adult influence each other and have expectations about the reactions of his partner. This early interaction, however, is one of primary intersubjectivity, it is a pure "I-you" interaction, much the same as the intimate interchange between lovers.

From the beginning, however, the child is also busy discovering the world around him, increasingly so as his five senses mature and his motor ability develops. To begin with, the child will keep these two activities apart: either interacting with a partner in protoconversation or examining the world around. In the second half of his first year the child will start to share his experiences with a partner. Colwyn Trevarthen has documented how the adult will now be able to use real life as a topic in his interactions with the child: an "it" is included in the "I-you" interaction. The period of secondary intersubjectivity has begun.

It is now that the traditional language games that we use with children appear. A very basic one is what I call "the look-point-name game". It goes like this: Adult and child are together and the adult observes that the child takes a special interest in something, e.g. a bird pecking at the windowsill. The adult, turning to the child, will point to the bird, saying: "Look! What is that? It is a birdie". The child will recognize that he is sharing his experience with the adult and this will enhance his pleasure.

In this way child and adult will share interesting objects in their environment and rituals will develop where favorite objects are commented upon again and again, with either adult or child as initiator. Gradually the child will take a more active part, babbling and gesturing; he will learn to point himself and he will try to imitate the ever recurring words of the phrase, "look", "there," etc. But the child will also come to recognize the words for the objects referred to, which are framed by the ritualized phrase; he will comprehend them and gradually he will try to say them himself.

The look-point-name game is thus a tremendous vehicle for vocabulary learning. Why is that so? It is not only because things of interest to the child are named in a salient way: a clearly pronounced word framed by an ever-returning phrase and accompanied by pointing at the referent. It is the fact that the experience is shared and that the pleasure of sharing is signaled by tone of voice and by face in both partners, with the smile as its major expression. Voice and face also reveal that the object or event is worth observing, and that is why its name becomes crucial.

Thus, emotion is supporting intellect in the act of learning. Learning is about reality and acquiring a vocabulary for this reality, making it possible to retain the knowledge, to make it accessible and to verbally share it with other people.

In the same way the child will also learn his first written words. The adult writes down words for objects and events of special interest to the child, in clear-cut lowercase letters, each word on a separate card. He presents a word by showing it to the child in an atmosphere of

pleasure and joyful sharing, tying it to real life experience. Thus, the child will acquire a vocabulary of written words in much the same way as he is acquiring a spoken vocabulary, and by the aid of the look-point-name game.

Reading and writing with the growing child

In the interaction with the growing child, the same general guiding principles apply to written language: the child's own interest and real life experience are the foundations; joyful interaction and positive emotions are the impelling force.

But as the child matures, written words must have a special function in his life. The beginning of this function is play. In the early studies referred to above, there are numerous examples of how children use their cards for play. Little by little, the child will also be able to share the common functions of written language with his reading and writing partners. This is done in interaction. According to his capacity the child, supported by his elders and more experienced peers, is included in the activities where we use written language, and gradually he will take over more and more of the activity himself, identifying words on cans and packages, reading notices and advertisements, writing his name on postcards and letters, writing shopping lists, etc.

This development has been clearly demonstrated where reading and writing is practiced at daycare centers in Sweden. Here the written language is integrated into the normal activities. Words and texts are written down and produced in common - no prefabricated cards are used. The children get their favorite words written for them, and are allowed and helped to write themselves. They proudly save their own cards in their private boxes.

The children at the daycare centers are always read to aloud, in small groups, enabling them to look into the book, see the pictures, follow the text (the reading adult pointing to the text with her finger), and to ask questions. As they become independent readers, the older children read aloud to the younger ones. Spontaneously using both reading and writing privately among themselves, they learn from one another. New children arriving at the daycare center learn from their peers. Thus, in addition to the literalization from adult to child, we observe a genuine children's culture of reading and writing developing.

Today's practice is a far cry from the "Doman method" with the adult showing prewritten cards to the child, repeating them at regular intervals, again and again. No doubt Doman points out that the reading should be based on meaningful words tied directly to the things that they do note, and that the presentation should be done in a playful way and in a spirit of happiness. He also reminds us that a child hates to be examined. Without these precautions, Doman would not have reached the pioneers of early reading, whose research work has clarified the process by which the child all by himself learns how to read and write - to use the written language - as he learns how to use the spoken language.

But it is these pioneers, the authors of the first case studies, who started to modify and change the "method" - guided by the reactions of their children. Words were chosen according to

the preferences of the kids; utterances and little stories proposed by the children were written down (see e.g. Past, K.E.C., 1975); the children's spontaneous attempts at writing were supported: in the 1970s magnetic letters were resorted to when the child was too young to master a pencil (Past, K.E.C., 1975); later the computer became a major aid (Cohen, R. and Söderbergh, R., 1999). Preschool and daycare centers continued to modify and innovate, until, finally, one arrived at a way of helping the child to acquire the written language in the same way as he is helped to acquire the spoken language - by a natural process of inculturation in interaction with reading and writing partners.

The child's discrimination of visual form

Soon after the presentation of the first word cards, children demonstrate that they recognize the words, paying attention to their meaning. But already after some weeks of experience with written words they also begin to pay attention to their form, configurations of letters and the small details about separate letters within the words. This is also true of children who are presented word cards from the age of 9-15 months; one to three months later they may present evidence that they are paying attention to the graphic form of words and letters. In spite of their restricted vocabulary, some of them are astonishingly clever at communicating what they observe.

In order to elucidate this phenomenon, I am going to present observations of exactly the same kind made by children starting to learn to read around one year of age and by children learning from about two years of age, where the more advanced linguistic capacity of the older children allows them to be more explicit.

One- year-old children observing graphic form

Agnes got her first reading cards by 8 1/2 months: *mamma* (mummy) and *pappa* (daddy) (Söderbergh, R., 1998a). By eleven months of age, she received cards with the Christian names of her parents, Astrid and Bo. She picked them up, scrutinizing them for a long while. (She was perfectly aware that these were the names of her parents and, in the following days, she preferred to read them as "mamma" and "pappa" which was easier for her to pronounce.) Was she astonished to find that the names of her mummy and daddy did not look the same as the written words, "mamma" and "pappa?"

Three months later, however, we have clear evidence that Agnes, then 14 months old, was observing graphic form. Getting a bunch of new cards, she picked up "nalle" and "Ulla," looking from one to the other, repeatedly. The twice-occurring letter "l" in the middle of the two words seems to have attracted her attention.

At the same age, Agnes took a book that we used to read aloud to her. We had never drawn attention to the words printed in it, as we thought this a bit beyond her capacity. The title of the book was "Lukas i fönstret" (Lukas at the window). Taking the book, she now put her forefinger at the letters "ka" in "Lukas," saying "kakakaka", which was her baby word for "hen" that we had earlier written down to her on a reading card. So she drew our attention to the fact that the letters "ka" in "Lukas" were the same as those in "kakakaka".

Her ability to identify identical letters was to be demonstrated many times in the months to come: by the age of 15 months she took the words “Maria” and “docka” and pointed to the final “a” in both of them. Visiting a bookshop at the same age, she was wild with joy to see a book whose title contained the name Aron, shouting "Atte! Atte!" which was the way she pronounced her mother's name (Astrid). At that age a child has no means of making a verbal distinction between similarity and identity. Did she tell us "This word says Astrid " or did she try to draw our attention to the fact that it was similar to Astrid, beginning in the same letter as her mother's name? There is rather strong evidence for the similarity interpretation. By this time Agnes had begun to give certain letters names of her own coinage, after words beginning in that letter, words that were dear to her. Thus wherever she saw an “f,” she pointed to it saying "faffa" (reading card “farfar,” “paternal grandfather”).

At the age of 15 months, Agnes also gave evidence of being able to make still finer discriminations related to letters. She had recently received a Danish alphabet book, with songs, also recorded on tape, and with very fine pictures illustrating every letter. (Agnes's mother is half Danish and was eager to give her child this early chance to listen to her second language.) One day when Agnes was sitting on her granny's lap, looking at the pictures in the book, she suddenly closed it, and looked at the back cover, where the letters of the alphabet were randomly scattered, big and small. She first pointed to the big “O,” looking at her granny in a challenging way, as when playing the look-point-name game. After getting the requested answer - "This is an O" - she pointed to Ø (the big O with a bar crossing it, corresponding to Swedish Ö, the O with two dots). She then found the letter p, pointed to it and waited for her granny's reply. Finally she put her little forefinger on the letter q, which is a "mirrored" p.

This exercise in identifying next to identical letters was to be repeated a month later. She then first pointed to the three variations of the circle that you find in the Danish alphabet: Q, Ø and O. Then she pointed to the two varieties of the semicircle: C and G. So this 16-month-old girl was picking out a series of letters belonging to a common graphic class, and separated from one other by minimal contrasts, in the form of iacritical sign: the circle unmarked, the circle marked by a crossing bar and the circle marked by a "comma sign". In addition, she pointed to the semicircle unmarked and the semicircle marked by a dash.

By 16 months Agnes picked out two cards from her little box: the already mentioned “kakakaka,” meaning “hen,” and the “krakakra” meaning “crow” - another idiosyncratic word of hers, imitating the sound of a crow. She compared the two words carefully and read both of them aloud. Now she was beginning to observe not only graphic similarities but also the corresponding similarities in sound.

Tiny little details in letters seem to be very salient to children. Hannah, getting her first word cards at 9 months of age, two months later immediately pointed to the two dots in the word “näsa” (nose) (Cohen and Söderbergh, 1999). Mitra, learning to read in both Swedish and Persian from 12 months of age, had “snö” (snow) as one of her favorite words (Cohen and Söderbergh, 1999). By 13 months of age she was watching TV, when suddenly the word “övriga” appeared on the screen. "nö!" she cried out, observing the letter with the two dots. By 20 months of age, Mitra mistook the word “hej” (hello) for “nej” (no). Her mother corrected her,

and she immediately learned to differentiate between the two words, also giving a name to the tiny difference between them, saying "the big one" for the first letter in "hej" and "the little one" for the first letter in "nej."

The boy Emil was a slow speaker who got his first reading cards at 15 months of age. (Cohen and Söderbergh, 1999) Four months later his written vocabulary (60 words) exceeded his speech (40 words). This did not prevent him, however, from commenting on graphic similarities between words. When he got the new word "hoppa" (jump) he pointed to the last two letters "pa," saying "pappa". Having been given the new wordcard "hund" (dog), he pointed first to the initial letters "hu," then to his own head – "huvud" in Swedish. This word belonged to his bunch of cards for the parts of the body and for clothes, which he always read by pointing to the referents. So, this late speaking boy, by 19 months of age, was capable of communicating an interesting observation to his father: the new word he had just been given had the same beginning as one of his old favorites; they both began in "hu."

Nanna, who got her first reading cards at 14 months of age, was observed four months later comparing words beginning in the same letter (Cohen and Söderbergh, 1999). By the same age she was also reported to have misread the wordcard "pippi" (birdie) for the old and well-known "pappa." Is this really a misreading, or just an attempt at pointing out the similarity between the two words? In our next section we may get a solution to this and similar problems.

Children starting to read around two years of age

Exactly as with the baby readers, you will find children sitting by themselves scrutinizing cards and comparing words that have letters in common, especially in initial and final position. But you will also find examples where the children communicate their observations to their adult reading partners. I have selected comments made by two of these readers, because they elucidate earlier examples from the younger children, when they pay attention to the forms of words without having the verbal means to communicate their observations to us.

Astrid started to read when she was 2 years, 4 months old (Söderbergh, 1971). One month later, getting the new word "mage" (stomach) she said: "mage liknar (is similar to) öga (eye)." Both these words contain an "a," and the "g" in the middle. Astrid was verbally able to express that she had noted the similarity between the two words - had she been less verbally versatile she might just have said "öga" when being shown "mage" even if she had noticed the similarity and wanted to communicate this observation. In this case she would probably have been accused of making a misreading, exactly as the younger Nanna who seeing "pippi" said "pappa", and little Mitra seeing "övriga" said "snö". But Emil, who had the poorest speech of the baby readers, could make himself explicit because he had the habit of pointing in order to compensate for his limited oral language. Thus, pointing to the first two letters in the word "hund" and then to his own head (Swedish huvud) he convinced his father that he did not mistake "hund" for "huvud" but just had observed that the two words both began in "hu"

In her third month of reading, Astrid (2 years, 7 months) made a more explicit comment on the similarity between two words: being shown the new card "precis" she said: "precis liknar

pappa, men i pappa är det tre stycken" ('precis' is similar to 'pappa,' but in 'pappa' there are three 'p's'). Not yet knowing the names of letters, she could count to three and thus tell that she saw that the first letter in "precis" occurred three times in "pappa" In this way she also revealed that, not only initial position, but also the repetition of letters makes them salient to a child. This confirms our earlier observations on the younger readers: Agnes, 14 months old, compared "nalle" and "Ulla" with the two "l's" in the middle of both words, and she found out that the name "Lukas" contained the same combination of letters as her reading card "kakakaka." By 16 months old, she also compared and read aloud the two words "kakakaka" and "krakakra" with their repeated shared letters.

Children are fascinated by the details of letters, and often identify them with labels which they perceive make them similar to other letters and words. Mariana, starting to read in English and Spanish before the age of two, made several comments on the letter "i" because of its dot, e.g., "(the word) 'it' has a dot" (Past, 1975; 1976). Pointing to the Spanish word for "is" ('es'), she said "I see two 'i's'. They have dots." This "mistake" by Mariana makes it still more plausible that Nanna, 19 months, saying "pappa" for "pippi" wants to draw the attention to the similarity between the two words - the three times repeated "p" - and does not mistake the word 'pippi' with its two 'i's' (salient because of the dot) for the old and well-known "pappa" Nor would Mitra, 13 months old, have mistaken the new word "övriga" on the TV-screen for her old favorite "snö." Rather, it is the circle with two dots occurring in both words that attracts her attention.

When Astrid, at 2 years, 7 months, commented on the similarity between "précis" and "pappa," she did not yet know the names of letters. Nor did Mariana, 2 years, 2 months, know all the names of letters. So when Mariana wanted to compare words, she solved the problem by coining names of her own. As "daddy," one of her earliest and most beloved wordcards, had three "d's," one in initial position and two in the middle of the word, she called the letter "d" a "daddy" letter. The Spanish word for "cat" - "gato" - was another favorite, and thus the letter "g" was named a "gato letter." She loved to jump, and the initial letter in jumping was called a "jumping letter." This brings to mind the habit of Agnes, who was not yet one and a half years old, to point to the letter "f" saying "farfar". Given the evidence from Mariana, the interpretation of her comment as a misreading is not very convincing; it is more plausible that Agnes intended to express the fact that this letter was a "farfar letter," although she was not able to express verbally what she really meant.

Children beginning to read around two years of age will observe and correctly communicate their observations on the similarities and differences in the graphic forms of words. Children starting to read a whole year earlier will make similar observations one to three months after they have received their first reading cards. This is the first stage in the process of discovering the relations between what they see and what they hear, the relation between letters and sounds, which will finally lead to the breaking of the code and the ability to independently read new words.

Breaking the code-different strategies

In my first monograph on early reading (Söderbergh, 1971; 1977), I devoted most of the study to finding out how my daughter Astrid succeeded in breaking the code. Codebreaking is clandestine work, going on subliminally, while on the surface the child is seemingly only learning to read single words and phrases. The reason why I was put on the track of finding out about Astrid's codebreaking was that, in her fifth month of reading, at 2 years, 9 months old, she suddenly told me what was written on a new card I presented to her. As it happened to be correct, and I could see what strategy she had used in order to read the word, I changed my way of presenting the cards, and asked her to tell me what was written on them instead of telling her what they said. The enthusiasm I showed when in this way I found out more and more about the strategies she used when she tried to read the cards helped to keep up the good atmosphere of interaction and made her happy about trying to read the words, even when she did not succeed and I had to end up by providing the correct reading myself.

Morphemes

Astrid's first main strategy was to break the words down into morphemes. In Swedish word formation, compounding occupies a central position. When Astrid had started to read little books, many compounds turned up, and as long as the girl could read the components she could also read the new compound words. In Swedish there are also inflectional ending morphemes, in nouns marking, e.g. genitive, plural, definiteness and gender, in verbs-marking, e.g. person and time. As children's picture books have a rather restricted collection of topics, the same words are apt to occur again and again, but in different inflectional forms. So Astrid in her "dictionary" of written words very soon had received a series of word pairs contrasting in the same way: paradigms like Anna-Annas, Astrid-Astrids, mamma-mammas, all of which she could read. But to discriminate between two members of a pair she had to be observant to the contrast, in this case the genitive ending "-s." In this way she learned the paradigm, and that is why she could read correctly the new word "ugglan," when earlier she had learned "ugglans."

During the weeks and months following her fifth month of reading, Astrid demonstrated that she could read more and more words by manipulating base morphemes and ending morphemes. In this way she discovered that, for instance, the difference between "bil" and "bilar" is the "-ar" in writing and the corresponding sound combination. In Swedish the pronunciation of the names of the nine letters used to denote vowel-sounds corresponds to the sound value of the long variant of the vowel. When Astrid had learned the names of the letters, the task to trace the corresponding vowel-sounds would not be too difficult. Thus, the problem will mainly be to find out about the consonants and their corresponding letters (in the cases where these are not found in endings).

Contrasting syllables and rhymes

To explore the sounds/letters not found in ending morphemes, the child will rely on contrasting syllables and rhymes. An elucidating example is Astrid's correct reading of the new word 'parken.' I was quite astonished as she had not been exposed to the indefinite form 'park,' and thus could not be expected to be able to read the definite form. So I asked her: "How can you read 'parken'?" "I have had 'marken,'" she replied. In the two words, the only difference is the initial consonant, both words followed by the vowel 'a'. The contrasting syllables "ma" and

“pa” were well known to her from the words learned earlier, “mamma” and “pappa.” The experience of this contrast is exploited when reading the new word “parken” on the basis of “marken.”

Swedish children learning to read from the age of two-three years seem to follow the same path as Astrid. This is true even of hearing-impaired children, although it is a slower process with them (Söderbergh 1976a). In learning to read in languages where ending morphemes occupy a less prominent position or are lacking altogether, the syllabic strategy is most important. Mariana in Texas, learning to read in both English and Spanish, seems to have been making frequent use of syllabic reading, especially in Spanish, with its closer sound-to-letter correspondences. Her mother writes: " Her ability to analyze syllables was very good, especially in Spanish. She could figure out almost any word in Spanish if it were exposed to her one syllable at a time"(Past, K.E.C., 1975, p. 51).

Even Swedish children may rely more heavily on syllabic reading, and on rhymes, when breaking the code. This is true of the children learning to read from about one year of age, because they are reading long before they have acquired the Swedish inflectional system in all its complexity. Thus, Nanna took a keen interest in nursery rhymes and songs, and from 18 months of age, she got her favorite rhymes written on posters. She then started to coin new nonsense rhymes herself, and a couple of months later she had broken the code. By listening to and enjoying rhyming words in her songs, exploring them until she herself acquired the ability to rhyme, repeating her songs again and again while looking at the posters, she realized that what sounds alike also looks alike. Looking at the rhymes, she was also made aware of the contrasting parts, which finally led to an insight into the sound value of letters. In a child not yet two years old, visual analysis combines with aural analysis to break the alphabetic code.

Our experiences in Sweden have turned around the conventional understanding of the reading process as the idea of first acquiring the sound sequences and then attaching them to written form. Instead, the child who is allowed to be confronted with the written language parallel with his early acquisition of the spoken language will analyze and process both modes simultaneously.

Breaking the code at the daycare center

The children at the Swedish daycare centers go through the same process as the "home readers," observing and commenting on the form of written words and relating them to the corresponding spoken ones, and gradually becoming independent readers.

In April of 2000, Assar Thorsjö examined the 17 children who were about to leave the daycare center for school (personal communication, April 13, 2000). The children were all born in 1994 and thus 5 to 6 years old. Thorsjö reports that seven of the 17 children were independent readers and eight did not yet read fluently but discovered the sound-letter relation and used their knowledge in writing. A closer look at the seven independent readers (five boys, two girls) shows that two of them (one boy and one girl) attended the Öjaby Center for four years (the boy with one year's interruption), one girl for three years (with one year's interruption), two boys for two and a half years and two boys for one year only. (The interruptions were each due to

Swedish law, requiring that if a mother is at home with a newborn baby, the older children must leave daycare and stay at home until the baby is one year old and is enrolled into daycare).

These results show that a daycare center where reading and writing are practiced, and where there are spontaneous reading and writing activities going on among the children outside the control of the adults, may afford fertile ground for literalization. The question "how quickly does a child break the code" seems to be very difficult to answer, however. As with home readers, you will find great individual variations. Two of the boys at the daycare center broke the code after only one year. Among the home readers, one child starting at 14 months had broken the code 10 months later, another starting as early as 8 1/2 months old broke the code shortly before 3 years of age. A factor common to all the children, whether they break the code sooner or later seems to be their involvement and their motivation and interest which will give fruit in its time.

How reading influences the development of spoken language

When two-year-olds start to read, the attentive adult latches on to the children's spoken language, giving them written words and phrases that they already use in their spoken language. The study of early reading deaf children, however, shows that written language may open the floodgates to the active face-to-face language of the child, sign language for the profoundly deaf, and also spoken language for the severely hearing-impaired. One of these children, after one year of reading, had advanced as far as little books, and her mother then reported that she at that time learned new words only by reading (Söderbergh, 1985). Reading and literature allowed her to go beyond the very restricted here-and-now vocabulary and the simple phrases which make up the everyday language of a deaf child.

Also for children starting to read around one year of age, written words may be an activating force. A good example is the boy Emil, who had very little spoken language when he received his first reading cards at 15 months of age. By 19 months his written vocabulary of 60 words exceeded his spoken (40 words). The words he could not say he read by pointing to the referents. Five months later, Emil was reading sentences aloud. Here, the total language development of a slow speaker was accelerated with the reading cards as the horse before the carriage. Emil was reading sentences at an age where our first generation of early readers had barely started to read their first single cards (Cohen, R. and Söderbergh, R., 1999).

How reading influences the development of morphology and syntax is evident from our studies of deaf children and of the baby readers. Severely hearing impaired children have great difficulty in distinguishing ending morphemes, functors and connectors in spoken language, as these are generally unstressed parts of the utterance. The sign language of deaf children has a structure completely different from that of spoken language, so with them, written language affords the first acquaintance with these words and forms. The children learning to read in the preschool for deaf children were reported to have profited much from their reading (Söderbergh 1981a; 1985). In this way they learned the structure particular to written language very early, by reading, and could later use this knowledge in their own writing. To the severely hearing-impaired speakers there was also a transfer to their oral language. From having used strongly

context-bound one- or two-word-utterances, they began using multiword utterances and talked about the present, the past and the future. Their speech had also become better articulated.

We remember that Nanna, starting to read at 14 months, had posters with favorite nursery rhymes and songs. Here you could find prepositions and connectors that Nanna did not yet use in her spontaneous spoken language, but Nanna read her posters aloud, struggling to get it right, and so these functors also entered her spoken language. Nanna also made use of written words to improve her pronunciation, slowly articulating them with her finger tracing the letters. Here the child's written language was ahead of her spoken language and she, by two years of age, purposefully used written words to improve her speech (Wester, 1994). When they get older and read more advanced written texts, the early readers may meet with morphology and syntactic constructions that never are used in speech. They will observe and learn these forms many years earlier than children normally do when they meet with these constructions in school (Söderbergh, 1981b). Through reading, children also get acquainted with different styles and genres, which attract their attention and will influence their own use of spoken language (Cohen, R. and Söderbergh, R., 1999). This has also been observed by Margaret Clark in her study "Young Fluent Readers" (1976).

Through reading, the early readers also learn story structure (Clark, 1976). In a case study of my daughter, Astrid, I present indirect evidence of her grasp of story structure of considerable complexity. By the age of 5 1/2, Astrid spontaneously illustrated stories from books she had read. Some of these illustrations cover up to 30 pages of text, and her choice of episodes to illustrate mirrors the structure of the story she tries to retell in pictures (Söderbergh, 1998b).

We have already mentioned how reading may be a support for bilingualism (Past, A.W. 1976) and afford a means of improving the language development of children with severe language handicaps, such as developmental dysphasia and Down's syndrome (Söderbergh 1993). As with normally developing children, not only language, but also the total development of the child will profit; the achievement will strengthen the child's self-confidence, making him grow as a person (Clark, 1976; Söderbergh, 1993; Thorsjö, personal communication, April 2000).

The roots of this strong self-confidence, however, are to be found in the interaction between adult and child, where the child is respected, treated as an equal worth listening to, supported when he wants and needs support, but given elbow-room as he is growing more competent. This brings to mind an educational philosophy found in Lev Vygotskij, now being revived in our Western society, but not yet permeating the practice in our schools and with our preschool children and babies. So let us end by a few words about Vygotskij and his ideas.

Theories of Lev Vygotskij relevant to our concept of early reading and writing

According to traditional educational theory and practice, learning is an entirely external process that only utilizes the achievements of development. Learning trails behind development. Using a traditional Binet test, where only the child's independent problem solving will count; you define the mental age of the child. The common view is that there is no use trying to teach him anything that goes beyond this mental age. You have to wait for the child to mature.

Vygotskij holds that learning and development are interrelated from the child's first day of life. In addition to an actual developmental level, established by using conventional tests defining the mental age of the child, Vygotskij determines a potential developmental level. The potential developmental level is defined in a situation where children solve problems assisted by adults or more competent peers. Vygotskij introduces the concept of "zone of proximal development", which is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers"(Vygotskij 1978).

According to Vygotskij, the zone of proximal development defines those functions that are in the process of maturing, the "buds" or "flowers" of development. Thus the potential developmental level characterizes mental development prospectively, whereas actual developmental level characterizes mental development retrospectively. Vygotskij introduces a dynamic view of development where the adult takes care of the child's education by being a step in advance. In interaction with the child he starts a process by which the child will grow into the intellectual life of those around him. He finds strong support for his theory from his experience as a teacher of retarded children. Here a "waiting for maturation" would have been a catastrophe. Thus, according to Vygotskij, the developmental process lags behind the learning process and, properly organized, learning will result in mental development.

Another major concept of Vygotskij's is internalization. The process of interaction between adult and child is an interpsychological one where the child performs under the guidance of and with support from the adult, but successively, the child will be able to perform on his own. The interpsychological process has developed and changed into an intrapsychological one. External knowledge and abilities have become internalized. If what the child learns is a symbolic system, such as written language, the result will be a development in the child of higher mental functions (Wertsch, 1985), including the ability of analytical and abstract thinking.

In our study of early reading children, the adult is always one step in advance. The one-year-old reader will get his first cards before he can say the words, but his exposure to written words will stimulate the development of spoken language development. Later, texts may be introduced even if the child's connected speech is slightly behind the structure of the written text. Again the development of speech will follow in the steps of written language. Carefully trying intuitively to find the child's zone of proximal development, the adult will aim at making the interaction a challenge, always taking care, however, to advance in accordance with the particular preferences and interests of each individual child.

What the children first do in interaction with and supported by adults, they will later be able to do all by themselves: reading sentences and texts, writing words and short messages. Interpsychological processes (between adult and child) have become intrapsychological processes (working within the child). Internalization has taken place.

Vygotskij claims that the partners of the child may not only be adults but also more competent peers. This has been clearly demonstrated in the daycare centers where reading and

writing activities are practiced. Under supervision, younger children and newcomers are taken care of by more experienced children.

Finally, the exposure to the symbolic system of written language has evoked higher mental functions in the children. The code breaking process here affords an elucidating example. In this process the child actively and purposefully explores spoken and written language until he has discovered the principles of the alphabetical system. Swedish children do not normally make this discovery until they are seven to eight years old, i.e., when they have been in school for some time. The reason is that their zone of proximal development has not been given attention. Awaiting a supposed maturation in the child, enabling him first to identify rhymes, then to identify the visual structure of words and letters, and finally to combine these two insights, the adult has postponed the child's exposition to the "mature cultural forms of behavior"(Vygotskij, 1978) of reading and writing. Thus, the adult has for many years been depriving the child not only of the ability to read, but also of a development of higher mental functions.

References

- Bateson, M.C. (1979). The epigenesis of conversational interaction: a personal account of research development. In: Bullowa, M. (ed.) *Before speech. The beginning of interpersonal communication*. Cambridge: Cambridge University Press.
- Boulanger, F. (1992). *Lire à trois ans*. Paris: Nathan.
- Clark, M.M. (1976). *Young fluent readers*. London: Heinemann Educational Books.
- Cohen, R. (1977). *L'apprentissage précoce de la lecture*. Paris: PUF.
- Cohen, R. and Söderbergh, R. *Apprendre à lire avant de savoir parler*. Paris: Albin Michel Éducation, 1999. ISSN 2-226-09861-5.
- Doman, G. (1964). *How to teach your baby to read*. New York: Random House.
- Josic, M. and Savic, S. (1973). "Acquisition of reading ability in early childhood." Paper read at the 3rd congress of Yugoslav pedagogues. Ohrid.
- Lee, Ok Ro (1977). "Early bilingual reading as an aid to bilingual and bicultural adjustment for a second generation Korean child in the U.S." Unpublished dissertation. Georgetown University.
- Past, A.W. (1976). Preschool reading in two languages as a factor in bilingualism. Unpublished dissertation. University of Texas at Austin.
- Past, K.E.C. (1975). Reading in two languages from age two: a case study. Unpublished thesis. University of Texas at Austin.
- Söderbergh, R. (1964). *ordbildningsstudie*. (English summary: The suffix -mässig in Swedish. A historic-semantic study of word formation). Stockholm: Almqvist&Wiksell.
- Söderbergh, R. (1971; 1977). Reading in early childhood: a linguistic study of a preschool child's gradual acquisition of reading ability. Stockholm: Almqvist&Wiksell. (Reprinted 1977 Washington DC: Georgetown University Press).
- Söderbergh, R. (1976a). Learning to read: breaking the code or acquiring functional literacy? In: Lado, R. and Andersson, Th (eds) *Early Reading. Georgetown University Papers on Language and Linguistics 13*. Washington D.C.: Georgetown University Press.
- Söderbergh, R. (1976 b). Learning to read between two and five: some observations on normal hearing and deaf children. In: Lado, R. and Andersson, Th (eds) *Early Reading. Georgetown University Papers on Language and Linguistics 13*. Washington D.C.: Georgetown University Press.

Söderbergh, R. (1981a). *Teaching deaf preschool children to read in Sweden*. In: Dale, P. and Ingram, D. (eds) *Child language: an international perspective*. Baltimore: University Park Press.

Söderbergh, R. (1981b). Early reading as language acquisition. *System*, vol. 9, no 3, pp. 207-13.

Söderbergh, R. (1985). Early reading with deaf children. *Prospects*, vol. XV, no1, PP 77-85.

Söderbergh, R. (1993). *Tidig läsning och skrivning som stöd för tvåspråkighet (Early reading and writing as an aid to bilingualism)*. In: Hansen, E. (ed.) *The fourth Nordic Child Language Symposium*, Copenhagen, November 13-15, 1992. Copenhagen: Institute of Early Childhood Education, Royal Danish School of Education.

Söderbergh, R. (1997). Tal och skrift i samspel i den tidiga språkutvecklingen (Speech and writing in cooperation in early language development). In: Söderbergh, R. (ed.) *Från joller till läsning och skrivning (From babbling to reading and writing)*. Malmö: Gleerups.

Söderbergh, R. (1998a). Becoming literate during the second year of life: a Vygotskian perspective. In: Smoczyńska, M. (ed.) *Studia z psychologii nozwojowej i psycholingwistyki*. Krakow: Krakow University.

Söderbergh, R. (1998b). Narrative structure in drawings illustrating story texts by a five-and-a-half year old fluent reader. *Psychology of Language and Communication*, vol.2, no 2, pp. 17-36. Warszawa: Energeia.

Thorsjö, A. (1994). Tidig läsning. Läslekar med småbarn på Öjaby daghem och med 6-åringar i 6-årsgrupp (Early reading with preschool children at the Öjaby daycare center). In: Söderbergh, R. (ed.) *Literacy before school-start. Colloquium Paedolinguisticum 1993*. Child Language Research Institute Paper no 9. Lund: Lund University, Department of Linguistics.

Trevarthen, C. (1977). *Descriptive analysis of infant communicative behavior*. In: Schaffer, H.R. (ed.) *Studies in mother-infant interaction*. London: Academic Press.

Trevarthen, C. (1979). Communication and cooperation in early infancy: a description of primary intersubjectivity. In: Bullowa, M. (ed.) *Before speech. The beginning of interpersonal communication*. Cambridge: Cambridge University Press.

Trevarthen, C. and Hubley, P. (1978). Secondary intersubjectivity: confidence, confiding and acts of meaning in the first year. In: Lock, A. (ed.) *Action, gesture and symbol*. London: Academic Press.

Vygotskij, L.S. (1978). *Mind in society. The development of higher psychological processes*. (Ed. by Cole, M., John-Steiner, V., Scribner, S. and Suberman, E.). Cambridge, Mass.: Harvard University Press

Wertsch, J.M. (1985). *Vygotskij and the social formation of mind*. Cambridge, Mass.: Harvard University Press.

Wester, M. (1994). Att läsa vid tvåårs ålder (To be a reader by two years of age). In: Söderbergh, R. (ed.) *Literacy before school-start*. Colloquium Paedolinguisticum 1993. Child Language Research Institute Paper no 9. Lund: Lund University, Department of Linguistics.