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ABSTRACT

In order to describe the developmental patterns of writing and rereading from writing of kindergarten children across group and individual contexts, a study asked 123 kindergarten children in Palatine, Illinois, to write and reread stories of their own composition over a school year. Children were asked to write in group classroom conditions at monthly intervals and to write in individual interviews once in the fall, winter, and spring. In the first session, five common forms of writing (scribble, drawing, non-phonetic letterstrings, phonetic or invented spelling, and conventional orthography) were elicited and modelled. In this session and all subsequent sessions, children were encouraged to "write your own way." Sessions were audiotaped; notes about the order of composition and non-verbal behaviors were recorded by the examiner; and writing samples were collected. Scoring was done both on the spot and also rechecked at leisure by two researchers. Primary forms of writing in the fall were scribble, drawing, and letter strings. The primary form of rereading was the "written monologue," in which both wording and intonation are like written language. Two surprising results were explored: the endurance of scribble as a form of writing, particularly with advanced forms of composition and rereading behavior; and the late and tentative appearance of invented spelling. Findings suggest that children were building a repertoire of linguistic tools, all of which would be useful in a mature model of conventional literacy. (One table of data and six figures of childrens' writing are included; an appendix contains an example list of forms of writing and rereading.) (SR)

CENTER FOR THE STUDY OF READING

A READING RESEARCH AND EDUCATION CENTER REPORT

Technical Report No. 437

FORMS OF WRITING AND REREADING FROM WRITING: A PRELIMINARY REPORT

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Abstract

Reports of children's use of emergent forms of writing had indicated that the patterns of development were quite complex and required longitudinal studies of fairly large samples to clarify and complement findings from small sample studies. The primary focus of this study was to describe the developmental patterns of writing and rereading from writing of kindergarten children across group and individual contexts. Kindergarten children (N-123) from five classrooms were asked to write and reread stories of their own composition over a full school year. Children were asked to write in group classroom conditions at monthly intervals; they were asked to write in individual interviews once in the fall, winter, and spring. In the first session, five common forms of writing (scribble, drawing, non-phonetic letterstrings, phonetic or invented spelling, and conventional orthography) were elicited and modelled. In this session and all subsequent sessions, children were encouraged to "write your own way." Sessions were audiotaped; notes about the order of composition and non-verbal behaviors were recorded by the examiner; and writing samples were collected. Scoring was done both on the spot and also rechecked at leisure by two researchers. Primary forms of writing in the fall were scribble, drawing, and letter strings. The primary form of rereading was the "written monologue," in which both wording and intonation are written language-like. Two surprising results were explored: the endurance of scribble as a form of writing, particularly with advanced forms of composition and rereading behavior; and the late and tentative appearance of invented spelling. Authors speculate that children are building a repertoire of linguistic tools, all of which are useful in a mature model of conventional literacy.

FORMS OF WRITING AND REREADING FROM WRITING: A PRELIMINARY REPORT

If one observes only the forms of writing used by young children, it would appear that a nice, tidy developmental progression would be expected, moving from "less mature" to "more mature" writing forms, from scribbling to letters to invented spelling to conventional orthography. However, such an inference would be misleading. One way to understand the forms of children's writing and how they develop is to simultaneously observe how children read from their own writing. In the fall of 1985, we began a large-scale, longitudinal study of the forms of writing and rereading used by 123 kindergarten children when asked to write stories. In this report, we outline the impetus for the study and report preliminary findings. These findings focus on the first data collection in early October, 1985, though data patterns ranging throughout the kindergarten year into first grade are noted.

Researchers from Northwestern University had been working for a year in a collaborative effort in a large suburban school district (14 elementary schools; 25 kindergarten teachers, 48 morning and afternoon sessions) with a heterogeneous and growing school population. We had agreed to work with the district to improve their literacy curriculum and to conduct emergent literacy research in their classrooms. After a year of university research and in-classroom demonstrations of children's emergent literacy, many teachers had begun trying out ideas in their classrooms and were interested in testing the instructional efficacy of emergent literacy practices. In fact, the ideas were spreading so fast that we were in danger of losing any chance of having so-called "control groups" for an implementation study[1].

The time was ripe for this research because kindergarten teachers nationwide were becoming aware of the significance of children's emergent writing and reading behaviors. At the same time, many of these teachers were disturbed about anecdotal reports appearing in teacher magazines and journals, particularly examples of long, interesting stories written in very readable "invented spelling." These reports often were interpreted by teachers to mean that kindergartners "should" be using invented spelling. When many of these teachers invited their own kindergartners to write, they were disappointed that many of the children either refused to write or used different forms of writing such as scribble, drawing, or random-appearing strings of letters. They wanted to know how to foster emergent literacy in their classrooms and what to expect from their children when they did so[2].

Important theoretical and empirical questions are raised in current research. While it appears that a growing number of researchers (for example, Allen, in press; Arakaki, in press; Bissex, 1980; Chomsky, 1970; Clay, 1975; Dyson, 1982, 1984, 1985; Ferreiro, 1978, 1986; Ferreiro & Teberosky, 1982; Gundlach, 1982; Gundlach, McLane, Stott, & McNamee, 1985; Harste, Woodward, & Burke, 1984; King & Rentel, 1981; Martlew, 1986; Martinez & Teale, in press; Mason & Allen, 1986; Read, 1970, 1975; Stewart & Mason, in press; Sulzby, 1981, 1983, 1985a, 1985b; Sulzby & Teale, 1985; Wolf & Gardner, 1981) have begun investigating children's early writing development, the research has varied greatly in focus. Few investigators have included a systematic look at the forms of writing used by young children over time with a sample size sufficiently large to deal with issues of development and of individual variation within development. Even fewer have studied the forms of writing by examining how children reread their writing.

Clay (1975) focused upon the patterns that could be inferred as underlying many different forms of writing. In her pioneering book, *What did I write?* she displayed examples of children's use of the writing forms themselves, including scribble, drawing, strings of letters, copying, and readable invented spelling. She often used children's statements about their writing in order to infer the principles they were displaying, but she did not systematically study the rereading nor the compositional intent of all the pieces of writing.

Ferreiro (1978, 1984, 1986; Ferreiro & Teberosky, 1982; Ferreiro & Palacio-Gomez, 1982) has also studied the forms of writing and children's interpretations of how different pieces of writing can be read. In Ferreiro's tasks, researchers asked Argentinian and Mexican children to write given words or sentences (dictation from adult to child) and then to read these items back. The adults then interviewed the children about the relationship between the forms of their writing, their rereading, and the symbolic relationships involved, using a Piagetian clinical interview method. Ferreiro's work does not furnish an inventory of writing forms, as such, but she draws some conclusions about the forms that are most likely to accompany a given understanding about the relationship between speech or compositional intent and the writing forms.

Sulzby (1981, 1983, 1985b) has investigated children's use of different forms of writing and how they reread from these forms. She (Barnhart & Sulzby, 1984, 1986; Sulzby, 1981, 1983, 1985a) has found that children will use different writing forms for different tasks. Kindergarten children tend to use conventional or invented spelling to write short, familiar words, and to branch out to less mature appearing forms when asked to write sentences, and to even less mature appearing forms when asked to write stories or other pieces of connected discourse. Barnhart (1986) found this to be the case when using tasks designed to replicate Ferreiro's and Sulzby's methodologies. She also found that children from the USA may produce invented or conventional spelling but still give explanations of the relationship between graphics, speech, and meaning that fit Ferreiro's lower level categories.

In two studies of kindergarten children, Sulzby (1981, 1982) analyzed children's rereading from dictated and handwritten stories. She found that seven categorizations could capture all of the rereadings in relation to these two forms of writing. Her categorization system depended upon very few of the characteristics of the forms of writing and, while it furnished useful rankings of children and correlations with other measures, it lacked the precision needed to understand the relationship between writing and rereading.

From a project involving a 2-year longitudinal look at a small sample of nine children, Sulzby (1983) became convinced that the forms of writing and their relationship to rereading were critically important and that the developmental patterns were quite complex but understandable. In a later analysis of the data from an earlier study (Sulzby, 1985b), a group of 24 kindergarten children used the following not-yet-conventional forms when asked to write stories in one-to-one interviews: drawing, scribbling, letter-like forms, well-learned elements, and invented spelling. Sulzby (1983) had noted that the same children would use different forms of writing when asked to write stories, if the setting were varied from in-classroom writing to out-of-classroom individual interviews. In further analyses across the studies and from classroom and home observations, she (Sulzby, 1986; Sulzby & Teale, 1985) noted that the use of a less mature-appearing writing form might be paired with a quite complex form of rereading. Children would often use a less-mature form of writing to accomplish a more-mature compositional task and their subsequent rereading would also be high level.

These studies had suggested three questions: (a) What are the forms of writing and rereading used by kindergarten children? (b) What are the developmental patterns of writing and rereading? and (c) Do these patterns shift consistently over settings, in particular across group and individual interview settings?

For the current study, 11 writing and rereading samples were collected from 123 kindergarten children across five classrooms. Eight samples were from writing done in a group setting in the children's regular classrooms at approximately monthly intervals; 3 additional samples were from individual interviews, conducted quarterly. The samples were collected from early October through May of 1985-86. (Children from two of these classrooms were also interviewed individually in September, January, and May of their first grade year.)

Our preliminary report addresses three points: (a) the patterns of writing and rereading that the children used for the first story writing task of the study (the first time they were asked to write stories

in kindergarten); (b) the fit between the categories of writing and rereading that we were expecting and those that we actually found across the kindergarten year; and (c) unexpected patterns in two forms of writing, scribbling and invented spelling, and their relationship to rereading.

Method

Subjects

All the children (N-123) enrolled in five morning sessions of kindergarten in Palatine, Illinois, whose parents agreed that they could participate took part in the study. Children from two of these classes were also followed into first grade, with individual interviews being conducted in September, January, and May.

Teachers carried out two roles. They implemented emergent literacy techniques in their everyday teaching and they collected part of the data to see if their judgments coincided with those of the university researchers. Each teacher was interviewed at the outset of the study concerning the literacy curriculum in the classroom and other activities that she thought were relevant; about her philosophy of teaching, learning, and literacy; and about the implementations of emergent literacy in which she was interested. During training and in-service sessions, it was explained and repeated that we wanted each teacher to implement as many or as few of the techniques which we were presenting as she felt comfortable with; we explained that we were not judging the teachers but were simply describing the school literacy contexts of the children. During the school year, each teacher was observed teaching the class once a month. She also kept a log of activities that she thought were "emergent literacy implementations," and explained those activities to the observer after each month's visit. At the end of the school year, the teachers were interviewed about their views of the literacy development of their children, about the activities they had implemented, and again about their philosophies (full details are described in Buhle, 1987).

The second function of the teachers, to collect data from the children for a number of the group writing sessions, was also part of implementation. The purpose was to see if teachers could use the research assessment tool that the researchers were using and to see if their judgments were consistent with those of the researchers.

Procedures

First group data collection. This session was critical. In it, we modelled five major writing forms used by kindergartners and stressed our acceptance of children "writing the way kindergartners write." In October, a researcher visited each of the five classrooms to introduce story writing for the first time in the school setting[3]. The researcher, introduced as an important visitor, then explained to the children that she had some secrets. First, she wanted the children to write a story for her. Second, and usually after a child or two said, "But I can't write," the researcher explained that another part of the secret was that she knew how 5-year-old children (or kindergarten children) write and that she could read their writing: "And, if I can't read it, I have you here and you can read it for me."

The next, crucial step was to elicit and model five forms of writing. These were scribble, drawing, letter-strings, invented spelling, and conventional writing (or "how grown-ups write"). These forms had been found to be most prevalently used in previous studies and in home and classroom observations with 5-year-olds.

Modelling was not begun until the researcher had elicited topics that the children wanted to write about, calling on about half of the children, after allowing them a planning period to "put your thinking caps on and think about what you want to write about." When a number of topics were made public, the researcher selected one and asked the child volunteering that topic to suggest "how we could begin that story." This step was to offer the opportunity for children to engage in composition. As soon as a

beginning sentence was suggested, the adult restated it and asked how the children might write it, leading into modelling forms of writing.

If children volunteered the five expected forms (scribble, drawing, letter-strings, invented spelling, and conventional orthography), the researcher accepted their offerings; if any or all were not volunteered, the researcher mentioned them as examples of ways she had seen kindergartners write. The same forms were thus modelled with all of the groups and the adult emphasized to the children the understanding that the teachers/researchers would accept the children's ways of writing and reading, without prejudice. An associated principle in the elicitation was not to present erroneous information to the children (for example, never to state that scribble or drawing "said" the sentence being written). The adult would say about any of the four emergent forms, "Yes, some kindergartners would write____ like this," pointing to the printed form, "And then they could read it like this," sweeping her hand left to right beneath the printed form. The fifth form, conventional orthography, was referred to as "grown-up writing."

Following modelling, the researcher returned to the idea of topics for writing and asked more children about their topics. Then, she asked the children to remember that they could always "put their thinking caps back on" when they got to their seats if they needed to. Finally, she asked the children's teacher to explain how they were to find writing material and how they should go to their seats. (The purpose of this latter step was to reestablish class control for the teacher, involve her in the activity, and to get the children moving in established patterns to their seats).

The next step was for the adults to keep quiet and out of the children's way until they were engrossed in their writing. In this, as in all group sessions, children were free to talk with each other, look at each other's writing, and offer aid and comments. After the children were writing and some appeared almost ready to finish, the researcher announced that there was a special "author's chair" and a "waiting chair" in the room. The author's chair was the place for a child to come to read his or her story. The waiting chair (or chairs) were places to wait for one's turn without forming a crowded line.

Children then came up and read their stories to the examiner. The examiner's elicitation was, simply, "Read me your story," and, when the child was finished, to respond to the story with praise focused on story content. These reading elicitations were tape recorded and observations were noted on the checklist, "Forms of writing and rereading" (Sulzby, 1985b; see the Appendix; a videotape of this procedure is available through the North Central Regional Educational Laboratory, Elmhurst, Illinois).

Subsequent group sessions. In the sessions following the first, we reinstated the request for children to write stories on topics of their choosing. The forms of writing were not modelled in subsequent sessions. For the first three sessions, the researchers collected the data; and for the intermediate sessions, the teachers collected the data; for the final session, the researchers again collected the data. Researchers monitored the class for all the teacher data collections.

Individual sessions. In November, February, and May, each child was seen individually and asked to write a story in a quiet spot near the classroom. During the writing, the researcher made observational notes of the order of composition and of other non-verbal behaviors, including barely audible speech during composing. Following the writing, two rereadings were elicited: reading without pointing and reading with pointing. If the child did not point during the first rereading, the researcher then asked: "Now read it to me again, and this time *point* while you read," being careful not to introduce extra metalinguistic terms such as "point at the words," or even "point at what you are reading." If the child pointed voluntarily during the first rereading, the researcher simply asked the child to read the story again. The purpose of the two rereadings was to judge the stability of the speech used across the rereadings. The comparison across group and individual settings allows for a replication of findings from Sulzby (1983).

Story elicitation procedures. For the group story writings, the children were always allowed to choose their own topics. In the first individual session, the children were asked to write about learning to ride a big wheel or bicycle, to replicate Sulzby's previous work; for the final two individual sessions and for the first grade individual sessions, the children were asked to write about "something exciting or scary" that had happened to them. The examiner's wording was always precise, "Write your story," and "Read your story." Occasional clarifications such as, "Is this part of your story," pointing to a section of the graphics, were worded as neutrally as possible. All sessions were audiotaped and the writings were collected.

Analysis

During the time the child was writing or immediately afterward, the researcher (or teacher) checked the appropriate boxes on the "Forms of writing and rereading" checklist. These judgments were made based upon the examples and explanations provided in a manual, "Forms of writing and rereading example list" (see Appendix). All of the forms of writing that were used were checked. For rereading, only one category was to be checked, except for times in which a child refused initially but subsequently reread.

After the in-class data collection, the researcher made leisurely judgments by listening to the audiotape and comparing it with the child's writing. Thus, the first step was to calculate interrater agreement. A second researcher judged the data independently and interrater agreement was calculated. For sessions in which the teacher collected the data, two interrater agreements were calculated: teacher-researcher and researcher-researcher.

Findings and Discussion

Rater agreement. In all cases, interjudge agreement was higher than interjudge. For writing, the interjudge agreement ranged from 92% to 100% and interrater agreement ranged from 88% to 100%. Initial agreement was lower for rereading, with interrater agreement ranging from 75% to 100% and interrater agreement, from 71% to 87%.

As we had anticipated, the judgments for this first session were the most difficult and reflected the greatest number of disagreements during the year. (Agreements for both writing and rereading are in the 90-100% range for subsequent scoring.) After discussion of these points, the rules were clarified; some of those clarifications will be presented, briefly, below.

Forms of writing and rereading used in October. Table 1 shows information about the first question, namely, what are the forms of writing and rereading used by the kindergartners? Definitions of these categories appear in the Appendix. Children used a wide range of forms of writing and rereading for the first group story writing session. It can be seen that almost no children used invented spelling at the beginning of the year. Most of the children were using drawing, scribbling, and random or patterned letter strings. (The category "conventional" primarily represents the child's use of his/her name on the story side of the paper. We are now treating "name" as a separate category; see Ferreiro, 1986.)

[Insert Table 1 about here.]

While all of the children produced some graphics when asked to write, 13 of the children refused to read (saying "I don't know," "no," making no verbal response, or shaking their head). However, of these 13, 6 did in fact read after refusing. Examiners responded to a refusal, "Well, would you like to go to your seat and think about it for a while? Then you can read when you are ready." Three children were inadvertently not called back for a second reading request. Another three who produced graphics said, "I didn't write."

The predominant category of rereading was "written monologue." This behavior was paired with many forms of writing--drawing, scribble, or letter strings, as well as with more mature appearing forms of writing. To be judged to have produced a written monologue, the child must have uttered at least two clauses. The speech should be uttered predominantly in "reading intonation" (see Reuning, 1986; also Scollon & Scollon, 1981). There should be some indication that the wording was more appropriate to written prose than to oral conversation or storytelling. The predominance of the written monologue is some indication that, even though the children's writing forms appeared relatively immature, their reading attempts for these forms were quite advanced.

Some children used drawing as a means of writing and they reread from it. Some children indicated clearly that their drawing was not writing or was an illustration to the accompanying writing; others made no indication that the drawing is not writing. (From previous research, we believe that these children do make distinctions between drawing and writing--distinctions which are complex and appear in different guises--but that they sometimes use drawing as a means of writing.) Similarly, they write with scribble and letter strings.

The distribution of forms of writing and of rereading found in Table 1 is quite consistent with data we have gathered in more than 60 kindergarten classrooms at the beginning of the school year or when children are first asked to write pieces of connected discourse. Our next question involves the adequacy of the category system for capturing development across time.

Forms of writing and rereading: Expectations versus findings. The list of forms of writing and rereading found in the Appendix and Table 1 were our starting point. Two points are important to understand. First, we did not know at the outset how important some of our distinctions would be. An example of this is the distinction between *scribble-wavy* and *scribble-letterlike*. We suspected that this was an important distinction since children learn to abstract increasingly subtle featural patterns of letters, phonemes, etc. Thus we decided to err on the side of over-specifying subcategories rather than lumping together data and perhaps missing important patterns. Second, while we had begun to suspect that the forms of rereading might be highly similar to the patterns of emergent storybook reading (Sulzby, 1985a), we were not certain that we would find a direct modeling between the two. We wanted to keep our checklist as brief as possible and on one sheet, in order to develop a research tool that could also be used by a classroom teacher. Thus, we did not divide oral and written monologue into subcategories, and we lumped together aspectual and strategic reading.

We found that the "Forms of writing and rereading" checklist captured most of the patterns. Since our data are limited to kindergarten, however, we could be underestimating the importance of some categories, such as "letterlike units." We do not yet have an idea of the frequency with which this category occurs. We do have evidence from home studies (Sulzby, unpublished data) and from Ferreiro's (1986) work, that "pseudo letters" or "letterlike units," which are non-letters but have many letterlike features, appear in the development of younger children and continue to reappear as late as age 5. They are not to be confused, however, with poorly executed letters. Thus far we have observed that they appear, as Ferreiro (1986) indicates, *after* a child knows, can name, and can form a fair number of letters. In one instance from our data, a 4-year-old used letterlike forms for "writing fast" in order to write a batch of thank you notes.

A second possibly underestimated category is copying from environmental print, particularly in the group sessions. We could detect when many of the children copied items on display in the room. But two other situations may have occurred and not been detected. In one, the child who used random or patterned letter strings may have copied parts of these strings. In the second, a child who appeared to have produced a conventional or an invented spelling may instead have copied from not-so-obvious environmental print. We were as careful as we could be, but we suspect we missed some cases.

Copying is important for at least two reasons. First, we have found developmental patterns in children's ability to copy from models in the classroom. Second, from Sulzby's (1983) case studies, we

know that some children do a great deal of exploration of letter forms, letter names, and what-gets-copied when they copy from models. We need to know more about how copying functions (see, in particular, the descriptions of Clay, 1975) and to keep in mind that the child may be using copying for a different composition than the original author's.

The patterns of rereading appear to model almost directly the patterns of emergent storybook reading (Sulzby, 1985a), yet some changes must be made to account for the differences in the two text-types (storybook versus child-produced writing). It is not clear whether written monologue needs to be divided into three subcategories, as in the Sulzby storybook scheme, but there are at least two: the oral/written mix which is parallel to "reading and storytelling mixed," and the written monologue which currently parallels both "reading similar-to-original story" and "reading verbatim-like story." Since the reading behaviors of over-generalization and self-correction that separate these two in storybook reading would be almost impossible to detect using the group data collection procedures, we must depend upon the individual sessions, with their repeated readings, to address this question.

A final example of the parallels between the storybook system and writing/rereading system is in the category of aspectual/strategic, another combining of two storybook categories. The relative brevity of the children's stories in contrast with published storybooks makes it almost impossible to separate these two.

We have at least one form of rereading for handwritten stories that does not appear in storybook reading. This is "naming letters." Although theoretically it could appear as a form of aspectual reading, so far we have not observed it. However, we placed it in a position between written monologue and aspectual/strategic reading for that reason and for the obvious reason that it shows attention to the print on the page.

Two surprises: Scribbling and invented spelling. Thus far, we have had surprises with these two categories. First, scribbling is a much more ubiquitous and tenaciously used form of writing than we had expected, lasting through the school year for some children. Sulzby (1983, 1986; Sulzby & Teale, 1985) had discovered that it appeared in writings of children who also used other so-called "high level" writing systems such as invented spelling. Figures 1-6 illustrate the range of variation seen. Figures 1 and 2 come from children who composed predominantly with scribble. The first example combines scribble-wavy with letter strings. The second shows the variations of form called scribble-letterlike.

[Insert Figures 1-6 about here.]

The distinction between wavy and letterlike scribble may need a third distinction. As we have devised our operational definition, the issue of differentiation versus non-differentiation became the dividing feature. That is, if the waves or loops are fairly consistent and formed in the same direction, we code it as "wavy," but if there are obvious variations that appear to be not due to motor control and if, for example, the child reverses the direction of loops a number of times, we code it as "letterlike." Yet there is a great difference between the rudimentary forms of differentiation and scribble in which clear features of cursive writing appear.

We have discovered patterns in scribble that have heretofore been found in invented spelling. For instance, Sulzby (1981, 1985b) reported that children begin to explore spacing between words in invented spelling and show these spaces with hyphens, darkened blocks, column display, large dots, etc. Lo and behold, we found children who insert underlinings, hyphens, long vertical lines, and dots in scribble (see Figures 3-5).

Another interesting characteristic with scribble, however, is the appearance of composing language with scribble and the subsequent rereading of same scribble with the same speech over time. This is also tied to the behavior of tracking the scribble and making finger, voice, and scribble end simultaneously. Other children have been observed to reread the same scribble and recite the same

words for the same portions of the scribble. (One child, not part of the study, was videotaped for a television broadcast, rereading the same scribble four times in this manner at the behest of the television crew who did not know that this was unusual.)

Three children from three different classrooms used composing language during scirbbling during the same week in February. Later other children showed this same compositional behavior with scribble. At least one child composed with "decontextualized" language filled with specific nouns and verbs and reread with "contextualized" pronouns and simplified verbs. This is further evidence of children's use of lower level forms while performing higher level functions.

It appears that there may be a developmental pattern, beginning with not matching the scribble to the amount of speech and not tracking the scribble, to beginning to try to coordinate these through such methods as saying more words or elongating a final word or words, to accurately gauging the amount of both, to finally making scribble and speech match by composing and holding onto that composed speech for rereading. We have seen all these patterns; whether or not they fall into a direct line of development within the same child and across groups of children is a question yet to be addressed. We certainly know that this pattern does not exist alone but is intertwined with the use of other writing systems.

Invented spelling appears far later than we had expected for most children; it is less ubiquitous and more complex than we had suspected.[4] That is, it is for storywriting. Our findings of task differences (Barnhart, 1986; Barnhart & Sulzby, 1984, 1985; Sulzby, 1981, 1983) have convinced us that most 5-year-olds produce invented spelling for isolated words or brief phrases; however, they do this less often and later in age for longer pieces of composition.

We are looking for documentation of children who move into conventional writing and reading with little or no use of invented spelling. (We are aware that children's spellings may be called invented spelling well into the grades, but we are concerned with the onset of the child's writing texts that others can read conventionally and of the child's ability to read his/her own texts conventionally.) At this point, we do not have strong expectations about what we will find and suspect that we will not find a total absence but rather a strong preference or aversion to using it for composing connected discourse. One of the problems in research depending upon language production, of course, is the impossibility of tracking all the experiences of young children. Here converging evidence from naturalistic observation, case studies, and more formal elicitations are needed.

Syllabic writing, according to Ferreiro (e.g., Ferreiro & Teberosky, 1982; Ferreiro & Palacio Gomez, 1982), can appear either with letters that represent the first phoneme of each syllable or with letters that represent each syllable but without direct phonetic mapping. ("He wanted a bicycle" as HWTABSK vs. MNMNDLM.) In the current study, we did not find syllabic writing that did not map the actual sounds of the syllables, but that is probably due to the age and literacy experience of our U.S. students. (We have found children of this age who give syllabic explanations in response to the tasks used by Ferreiro; see Barnhart, 1986). For these storywriting samples, all the syllabic writing samples were classified as part of invented spelling in which the letters were used to map the phonetic elements of the spoken word.

We have divided invented spelling into three sub-categories: syllabic, intermediate, and full invented spelling. As explained above, syllabic invented spelling refers to the use of one letter per syllable; full invented spelling is one letter per phoneme; and intermediate is anything in between those extremes. Syllabic and full invented spelling appear to have a good basis in other research and in theory about how children may think. The sub-category of intermediate invented spelling lacks such a rationale. It appears that when vowels are used in syllable there is a shift in kind, but it is not clear that using more than one consonant per syllable is such a shift (*becau* as BK vs. BKS or BKZ). We expect that our data will provide clues and that the intermediate sub-category can then become better defined.

Another finding of this study documents in larger numbers some of Sulzby's earlier observations. While it would appear logical that a child who wrote in invented spelling would reread by tracking the print, that is not necessarily the case. In other words, if the child *encoded* phonetically, we had expected the child to *decode* phonetically. But this appears not to be the case for a fairly large sample of children when they initially use invented spelling (see Kamberelis & Sulzby, 1987). Many children who began using invented spelling near the end of kindergarten and in first grade did not track the print when they reread it. Some began tracking the print for a few words and then stopped. Others, when asked to locate a given word (*bike* written as BK) would locate it in the entire written text, in larger parts of the text (not necessarily including BK), and/or would not locate it in the same place over repeated requests. The most surprising instance was one child who had written for most of the year using invented spelling. She showed a disruption pattern that Sulzby (1982) documented previously concerning story stability with print that was not written phonetically. If this child was not asked to point to the print, she looked only generally in the direction of the paper and recited the story stably, but if she were directed to point while rereading (hence, to track), she varied the wording so much that entire clauses were changed. She showed this pattern over two complete replications. Our task now is to discover more details about how children gradually make the connection between their writing and conventional rereading once they begin to use phonetic encoding.

Conclusion

Overall, while there are surprises in children's writing development that require much pondering, the children we studied were advancing firmly toward conventional literacy. This was seen in reading as well as in writing. At the end of kindergarten, we predicted that all of the children would be writing multi-clause readable stories and rereading from them conventionally by the end of first grade. Indeed, this prediction was fulfilled.

The patterns during kindergarten are intriguing and appear puzzling at first glance. On the one hand, we found that kindergartners appeared to use a preponderance of low level writing forms at the beginning of kindergarten. These forms remained and changed very slowly for most children over the year's time. The number of children using invented spelling by year's end was not overwhelming. Yet, we learned that, so far as writing is concerned, appearance is indeed deceiving. While scribble was held to tenaciously as a form of writing, its relationship to rereading showed literacy growth. Other important findings reflect this complex relationship between the forms of writing and rereading. The child's first use of invented spelling was found not to be a clear-cut sign of a shift to alphabetic reasoning and conventional reading. The forms of rereading from emergent forms of writing were found to parallel the emergent ways that children read from favorite storybooks (Sulzby, 1985a) to a greater degree than we had expected. Finally, our overall conclusion is that the developmental patterns of writing and rereading are at least as complex as we had expected but that they reflect a logic that both researchers and teachers involved in this study could understand.

From these patterns, we derived a number of suggestions for teachers of kindergarten children. First, teachers should not expect all or even most of their children to use invented spelling in connected discourse, especially early in the year. Second, the appearance of invented spelling is not necessarily the apex of writing development nor the direct precursor of conventional writing. Third, teachers should not expect children who begin to use invented spelling to reread from it conventionally at first; that may take a while longer. Fourth, children who write using scribble, drawing, or letter strings may nonetheless be quite advanced in literacy development.

Kindergarten teachers who are considering encouraging their children to write and read their own writing may wish to use the technique described for our first group writing session for first inviting children to write in the classroom. Teachers who have used this technique have found that their children write easily and confidently. These teachers then move into other teaching adaptations of their own or those described in Martinez, Montgomery, Cates, Bercher, and Teale (1985)--having children write recipes, letters to penpals, notes to parents or teachers, responses to literature, or even

complaints to estranged lovers (see Teale, in press). These emergent literacy behaviors appear so freely across kindergarten classrooms of different kinds across the U.S. that we are convinced they represent natural development which classroom instruction needs to build upon.

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Author Notes

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Footnotes

[1]In fact, after planning a study involving two full implementation classes, two minimal implementation classes, and two "control" classes, we learned that the teachers in the so-called control groups were already using emergent literacy techniques although they were not identifying them as such. Thus we moved to a descriptive design for comparing the five participating classrooms.

[2]We were convinced that refusals to write and reread were artifacts of methodology; indeed, all of our work seems to support this conclusion. See Footnote 3 as well.

[3]This was a formalization of a procedure that the first author had used in over 40 kindergarten classrooms at the time; it had proved to eliminate almost entirely the problem of refusals in those classrooms, as it did in this study and subsequent work as well. A videotape of the procedure is now being produced through a collaboration between the University of Michigan (Project CIEL-Computers in Early Literacy) and the North Center Regional Educational Laboratory.

[4]Our percentages of invented spelling are far lower than those reported informally by some sources. We have seen writing from the classroom of teacher Sharon Ward from a public urban classroom in a school serving academically advanced children. At the end of her first year of implementation of emergent writing and reading, approximately two-thirds of her children were using invented spelling. At the end of the second year, 30 of 32 children were writing multi-clause stories in invented spelling. She reported that the emphasis in her classroom was always upon writing to communicate and that children read their stories to their classmates. A key factor to the shift to invented spelling, however, came in the form of letters to Santa in which the teacher elicited invented spelling from the children in a group setting. This task, we speculate, builds upon the list genre in which children tend to use invented spelling as well as upon another genre that uses well-rehearsed phrases (such as "Dear Santa," and "Love, Jeremy"). In other classrooms with more normal distributions but highly literate environments, like that reported in Martinez et al. (1985; from Teale, personal communication, January, 1987), the percentages of forms of writing are more in line with our report. We need research in various kinds of classrooms in order to understand the relationship between contexts and the forms of writing and rereading.

Table 1

Frequencies of Forms of Writing and Rereading Used by Children in October of Kindergarten

FORMS OF WRITING	CLASSROOMS ONE (N=30)	TWO (N=23)	THREE (N=23)	FOUR (N=23)	FIVE (N=24)	TOTAL (N=123)
Draw	26	2	19	6	21	74
Scribble						
--Wavy	1	9	4	8	4	26
--Letterlike	0	4	6	7	3	20
Letterlike Units	6	3	2	3	0	14
Letters-Random	11	17	12	11	5	56
Letters-Patterned	11	9	10	11	9	50
Letters-Name Elem.	4	3	4	1	2	14
Copying (Env. Print)	0	1	2	1	0	4
Invented Sp.-Syll.	0	0	0	0	0	0
Invented Sp.-Inter.	1	0	0	0	0	1
Invented Sp.-Full	1	0	0	1	2	4
Conventional[a]	16	4	12	9	6	47
Other[b]	5	0	0	1	0	6
FORMS OF REREADING						
Refusal	4	2	0	5	2	13
"I Didn't Write"	0	0	0	0	3	3
Dialogue	2	1	7	5	0	15
Label/Describing	14	4	1	1	1	22
Oral Monologue	6	5	8	4	6	30
Written Monologue	3	12	7	9	11	42
Naming Letters	1	1	0	2	0	4
Aspectual Strat.	0	0	1	0	3	4
Conventional	3	0	0	1	5	9
Other	0	0	1	1	0	5

[a]Conventional here includes the writing of the child's name and any other isolated words (all recorded on the checklist). No child wrote story in totally conventional print.

[b]Includes multiple coding for forms of writing and double-coding for 20 children in reading (oral and written monologue; refusal and subsequent rereading; naming letters and another form).

Figure Captions

Figure 1. Predominant writing form: scribble-wavy.

Figure 2. Predominant writing form: scribble-letterlike.

Figure 3. Scribble (with underlinings often found to indicate boundaries) used by child who had invented spelling.

Figure 4. Scribble with vertical lines indicating an awareness of boundaries, along with letter strings.

Figure 5. Scribble with hyphens indicating an awareness of boundaries.

Figure 6. Scribble-letterlike used with accompanying "composing language" and subsequent stable rereading

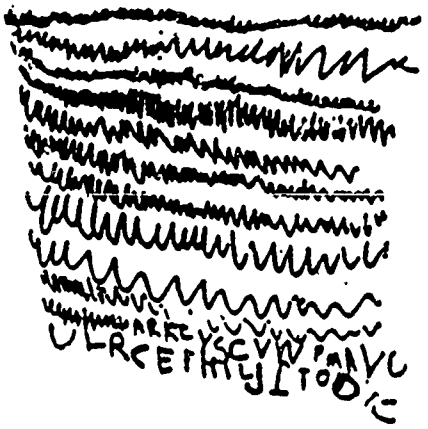


Figure 1

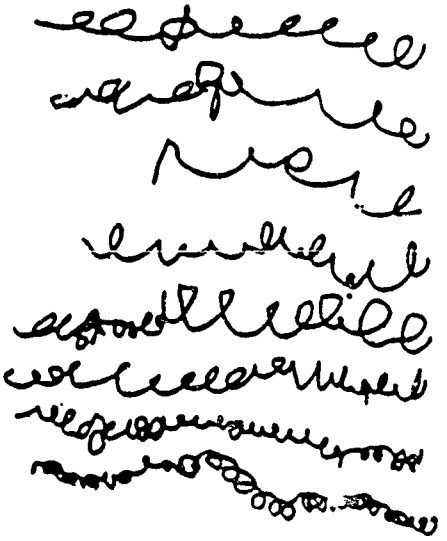


Figure 2

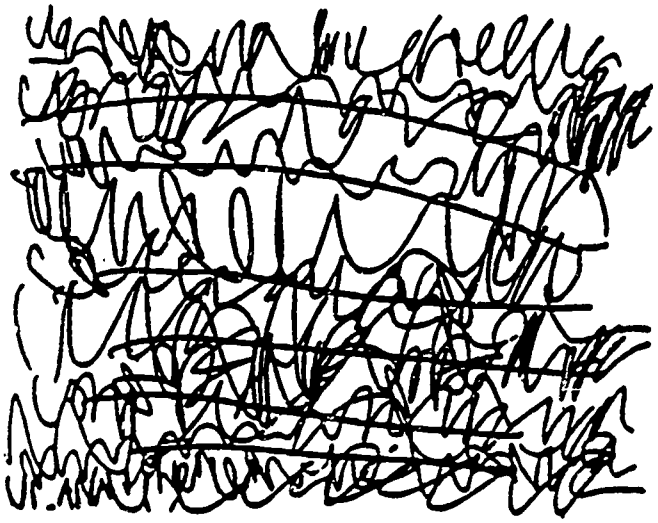


Figure 3

Figure 4

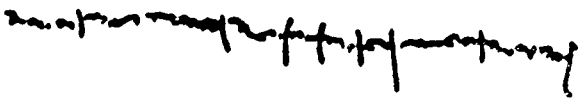


Figure 5

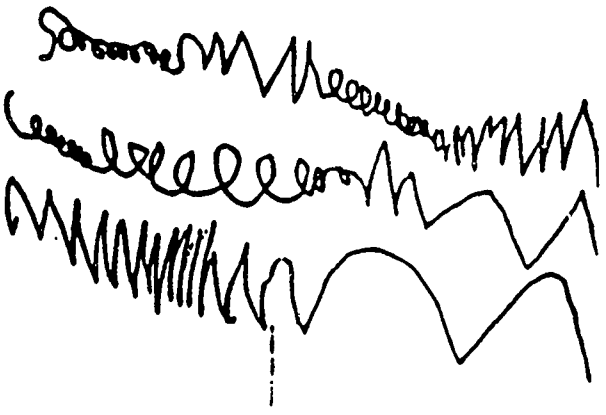


Figure 6

Appendix

Forms of Writing and Rereading

Example List

Elizabeth Sulzby

Northwestern University, 1985

[This version reflects changes made early in data collection. Some comments are directed toward use of this document with classroom instruction but the majority are addressed to researchers collecting data.]

Following is an example list of the primary forms of writing which we have observed kindergarten children using, along with forms of rereading which we have observed children using with these forms of writing. This example list and the checklist which accompanies it can be used both for research and classroom assessment; the discussion here is primarily addressed to classroom use.

As discussed elsewhere (Sulzby, 1985b), one can only judge the quality of the form of writing by comparing it with the rereading a child uses with it. So-called lower level forms can be used either as low level forms or as the means of performing a higher level task. For example, *scribble* can be used and the child may say, "I didn't write," or "That's my story," or "See, he loves to eat bones and one day he ran away so's nobody couldn't find him and that's all." Or, the child may reread a very formal story with the wording and intonation of written language, even tracing the *scribble* with the finger and making the scribble, finger, and voice end at the same points.

The examples are intended to accompany the "Forms of Writing and Rereading Checklist," to be used in kindergarten classrooms during the 1985-86 school year. This form can be used to keep record of children's progress in writing stories or other forms of connected discourse. (We have not tried it out with other genres such as list writing, letter writing, or direction writing. Notice that the child may write a list when you ask for a story; if so, check "other" and write a note explaining what the child did on the back of the Checklist).

The "Forms of Writing and Rereading Checklist" lists the forms of writing before the forms of rereading. When you use it, you can judge the form of writing by looking at the child's page. Check as many forms as the child uses. That is, the child may use some scribble, some drawing, some syllabic invented spelling, and some conventional writing. Check each one.

You will only be able to judge the rereading after the child has finished. Occasionally, a child uses more than one form; try to decide on one form and, if more than one is needed, explain on the line provided for comments. Similarly, you can only judge whether the child's eyes were on print, not on print, or occasionally on print after the child has completed the rereading. Always be certain to let the child terminate the rereading--when I began using the form in classroom situations, I discovered I had a tendency to say, "Are you done?" rather than wait for the child's signal, perhaps because I was concerned about time.

In this list the rereading forms are listed first because you need to think about each of them as being possible responses with each of the following forms of writing. On the checklist, they are listed second.

Information categories in top left-hand corner are primarily for the Northwestern University research team. We have assigned each teacher a code number. Use initials for the school and for researcher. Classroom means a.m. or p.m. to any special category such as bilingual.

List child's first name and, if possible, age in years and months down left-hand side. It's easiest to list them in the order they come up to read. Please note any absences.

Forms of Rereading

If you are a classroom teacher using this form for instructional purposes, you may want to hear only a few people read each day but may want to keep this checklist to record the forms of daily writing. Then at the end of a cycle, you could put together a composite of the class with a rereading for everyone.

1. Not observed. In some instances, you will not have heard the child reread. (This category refers to classroom teacher use, not research use.)

2. Refusal. Check this if the child says, "I can't," shakes head repeatedly, etc., after you give numerous encouragements and wait a long enough period of time to feel that s/he is not going to attempt to read. If you have checked *refusal* and the child reads later, check the form of the reading and write a brief note to explain the order.

3. "I didn't write." This response is important enough to indicate separately. Check this if the child says, "I didn't write," or the equivalent ("It doesn't say anything," "I didn't," "It's not anything").

4. Labelling/Describing. Check this response if the child labels items (except naming letters) or describes items written or drawn. Examples of labelling include, "A sun," "My mom," "A dog," and describing is simply a fuller statement, "This is a sun," or "That's my daddy." This category is closely tied to *dialogue* but it is usually metalinguistic in nature with varying degrees of sophistication.

5. Dialogue. Check this if the child will only respond if you ask questions, so you have a question/answer response pattern. Or the child initiates a question/answer pattern by techniques such as, "Know what, my dad got me a drum set?" (Adult: "Really?") "Yeah, and it's got three drums and a triangle and I can play it." Also included here are one clause statements that do not fit the labelling/describing category.

6. Oral Monologue. Check this if the child carries the full weight of responding and gives an orally-told story in the intonation and wording of oral language. The story may be about "it" and "he" and "they" without telling what or who these are. It may have sentences run together with "and" and "and then" and you may be in doubt about whether the child meant clauses to be separated or joined as compound sentences. The intonation will be entertaining and flowing, like that expected in oral storytelling. (There must be at least two full clauses to fit this category.)

7. Written Monologue. Check this if the child recites a story that is worded like written language and sounds like written language in intonation. The child may begin with a title and will specify who the people are and what the things in the story are. The story may end with "the end." The intonation may be staccato-like; "Once-upon-a-time-saw-a-monkey." Or it may be both staccato and highly entertaining but sound like an expressive oral reading done by an accomplished reader. (You could close your eyes and almost think the child was reading from print.)

8. Naming Letters. The child makes an important move toward attending to print when s/he "reads" by simply naming the letters s/he has written. Be sure to pause long enough to be

ce. 'ain that the child is not g'ng to do more than simply name letters or is not going to ask you for assistance. If s/he does that, the behavior may change to a higher or lower category.

9. Aspectual/Strategic Reading. I have taken these terms from children's storybook reading behavior but we have now seen a number of older kindergarteners and first graders use these behaviors. The child may sound out his/her own writing, or may simply read a few words and skip others. Or the child may recite the story while looking at print but not tracking accurately. The child is attending to print but not yet reading conventionally.

10. Conventional. The child is reading from print, conventionally. S/he will probably sound like the *written monologue* category but you will see his or her eyes on print, not that s/he is tracking the print, and will notice evidence that s/he is understanding what is being read.

11. Other. Check this when the rereading does not fit the other categories. Also, write a brief description on the line beneath the child's name, on the back of the page, or elsewhere. The 10 items listed above appear to be the most frequent categories, but they are not all-inclusive.

Forms of Writing

Check all the categories that the child uses. There will typically be more categories of writing than of rereading. Mark a dark bar across the bottom of the box of the predominant writing form.

Please note that some of the categories are related: the two *scribble* categories; the three *letter* categories; and the three *invented spelling* categories. At times, you may not be able to distinguish between the closely-related categories. If so, then make a large X across all those related boxes (one that goes across both scribble boxes or one that goes over all three letter boxes). Make the distinction whenever possible and use the large "X" as a last resort.

(Note: Samples gathered for research studies will be tape-recorded and rated by two judges, independently. Any difficulties in making distinctions under these conditions should be brought to my attention).

1. Drawing. Check this form if the child draws one picture for the entire composition or embeds pictures within other forms of writing. Do not check this form if the child clearly states that the drawing is illustration and not writing. Instead, mark the box with a capital I for *illustration*. The example is one complete drawing used for an entire story (Barnhart & Sulzby, 1984).

[Insert Example 1 here.]

2. Scribble--Wavy. Scribble is a continuous (or continuous with breaks) form without the definition of letters. The scribble may be curvy or pointed in form but there will be no differentiation of shapes. See example (Sulzby & Teale, 1985).

[Insert Example 2 here.]

3. Scribble--Letter-like. This *scribble* is different from the *wavy scribble* because the child is using different forms within the scribble, and these forms have some of the features of letters. In the example shown (Sulzby, unpublished data), the child's scribble has forms that look like lower-case E's, or L's, it has M- or N-like forms, descenders as in a lower-case G or Y. The relevant feature is differentiation of forms, in contrast with the undifferentiated character of scribble--wavy.

[Insert Example 3 here.]

4. Letter-like Units. These probably are closely related to *letter-like scribbles*, but they resemble manuscript letters (or, occasionally, separated cursive letters). The forms may resemble letters but they appear to be forms the child has created. Do not assign children's writing to this category, however, just because the child has formed real letters poorly. You may have evidence from the child's statements that s/he does not know what these "things" are. In the example shown, we did not have the child's statement about the letter-like forms, but two independent judges thought these were not letters but were letter-like forms. Elicit the child's explanation or labels whenever possible.

[Insert Example 4 here.]

5. Letters--random. The child writes with letters that appear to have been generated at random. In the example shown, there was no evidence that the child made any letter-sound correspondences between the letters and his message. These patterns would not appear in the English writing system, at least for words which the child would likely be exposed to.

[Insert Example 5 here.]

6. &
7. Letters--patterns and Letters--name elements. The child writes with letters that show repeated patterns. *Letters--patterns* are actually the same form as *Letters--name elements* but may include repeated letters (AAABBBCCCOPQMM) or patterns that approximate English spelling (MOVTIXREEMOOT or DABAGAWAWA). Example 6 shows elements repeated over and over.

[Insert Example 6 here.]

Examples 7a and 7b shown below are actually *name elements* and *patterns* mixed. In Example 7a, the AN and SU appeared to be elements from the child's last name, but the BO, RO, TO, and SO appeared to be repeated patterns. These patterns often are part of patterns of English spelling, but often they are repeated strings from the alphabet or other common strings. The brief part of Example 7b shows the child's first name patterns in the first two units and strings from the alphabet at the end.

[Insert Examples 7a and 7b here.]

8. Copying. Here the child will copy from environmental print in the room, on articles of clothing or school supplies, or seen out the window. In the example below, the child copied from a tape-recorder and a crayon box and then "read" a story about a different topic.

[Insert Example 8 here.]

9. Invented spelling--Syllabic. All invented spelling contains phonetic relationships between the sounds in the spoken words and the letters used to stand for those words. In *syllabic invented spelling*, the child uses only one letter per syllable, as shown in the example.

[Insert Example 9 here.]

10. Invented spelling--Intermediate. Just as the title implies, we are using *intermediate* to contain all the invented spelling between *syllabic and full*. In the example shown most of the spelling is *syllabic* but the words *pushed* and *myself* are *intermediate* (it is encoded in full).

[Insert Example 10 here.]

11. Invented spelling--Full. In *full invented spelling*, there is a letter for all or almost all of the sounds in the spoken word. The example that follows is almost totally *full invented spelling*, although it has a few conventionally spelled words (such as, *I'll* and *she*).

[Insert Example 11 here.]

12. Conventional. The child uses conventional *correct*, or dictionary spelling. See the conventional spelling in Example 11. The following example shows a child who wrote a list of conventional words when asked to write a story. This child's writing would be marked as *conventional*. If the child reread the *story* by reciting a story, the rereading would be marked in the appropriate box; but if the child read the list of words as, *at, cat, dog*, then the rereading would be marked *other*, since the rereading system is based upon the assumption of an attempt to create connected discourse.

[Insert Example 12 here.]

13. Other. Mark this box if the child uses a writing system that does not fit the descriptions above. Always describe this sytem by writing a note on the back with the child's name or number. Some of the less frequent systems include using abbreviations, rebus writing, and inventing a set of new symbols (code). (For brevity, no examples are included.)

Eyes on Print

We have added this set of categories to expand our assessment of rereading. We could add numerous other categories, including *use of the page space, directionality*, spacing, etc., but the *eyes on print* category is particularly important. We have not, however, attempted to make these judgments extremely precise.

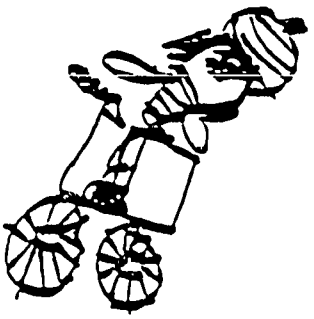
They cannot be retrieved, however, from the audiotapes or from the children's written products, so on-the-spot observation is necessary.

Mark *yes* if the child's eyes are on the printed page all of the rereading time; mark *no* if they are not on the page at all; and mark *occasional* if they are only occasionally on the page. You are not being asked to judge whether or not the child is actually tracking print, but you could add a note to that effect, if you wish. (If you marked *aspectual/strategy dependent* or *conventional* rereading, that means that the child was tracking print.)

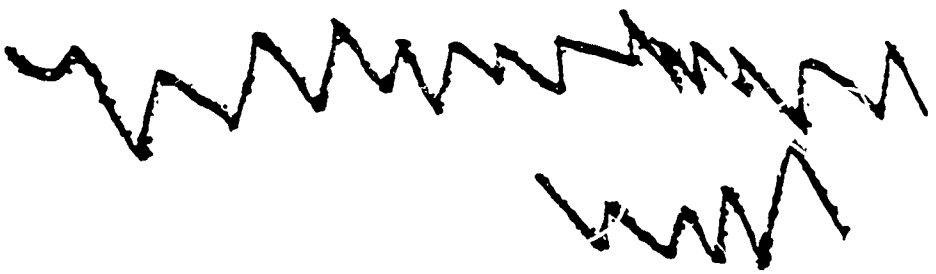
We added the category pointing at pictures or marks for those instances in which the child is pointing and appears to be tracking but the print being tracked is drawing or non-linear units. (This would not be used for pointing at scribble.)

(Note: *Not observed* and *refusals* in rereading would imply that the *eyes on print* category could not be completed.)

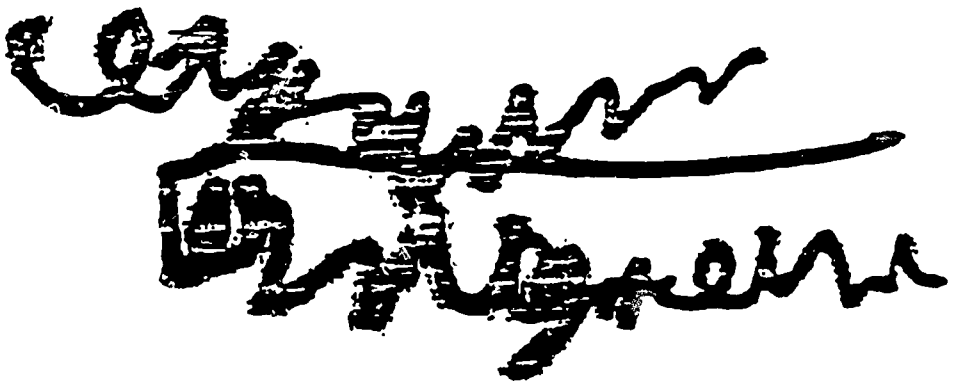
Example 1



Example 2



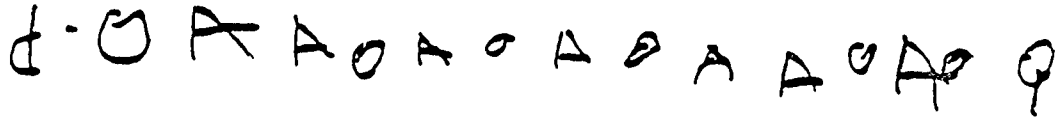
Example 3



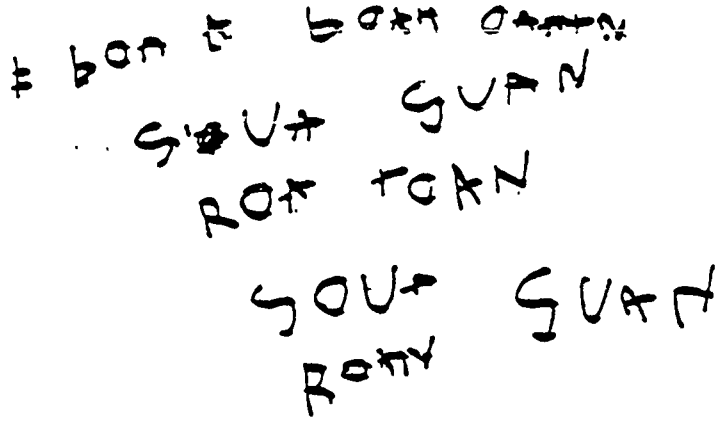
Example 4

Example 5

Example 6

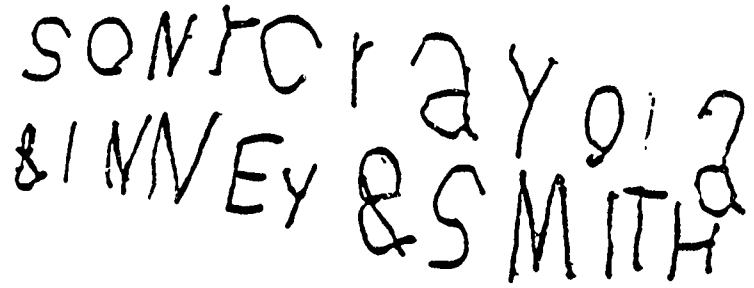


Example 7a



Example 7b

Example 8



Example 9

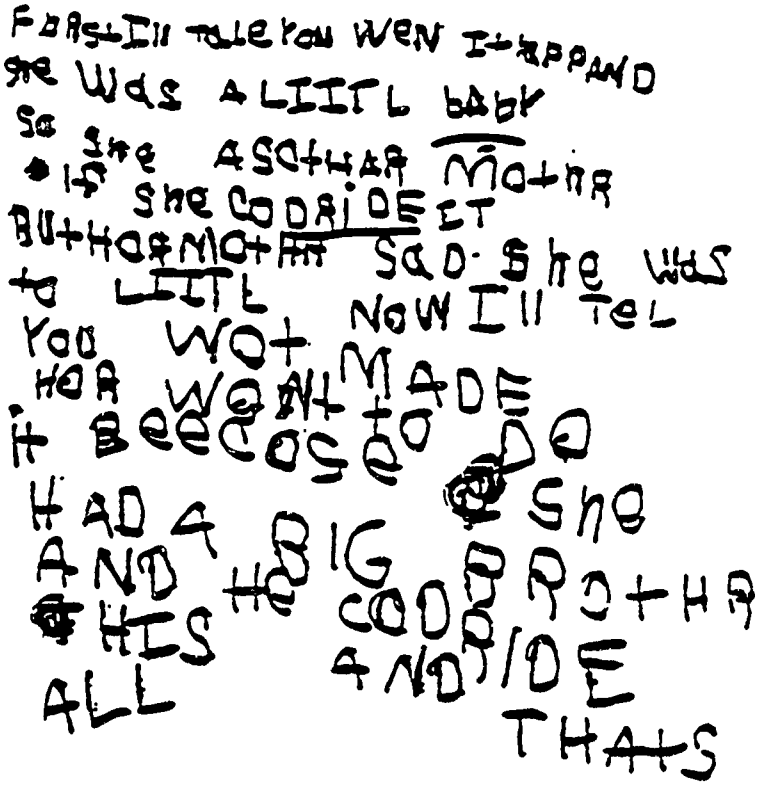
I$WtRABW (I wanted to ride a big wheel.)

Example 10

MBRMAWMTSKPTMB/MSF
IDET

My dad helped me with my tricycle (TSK). He pushed (PT) me. [He let me do it] by (B) myself (MSF). I (I) did (D) it (IT).

Example 11



Example 12