It's all in the name : early writing: from imitating print to phonetic writing

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IT'S ALL IN THE NAME

Early writing:
From Imitating Print to Phonetic writing

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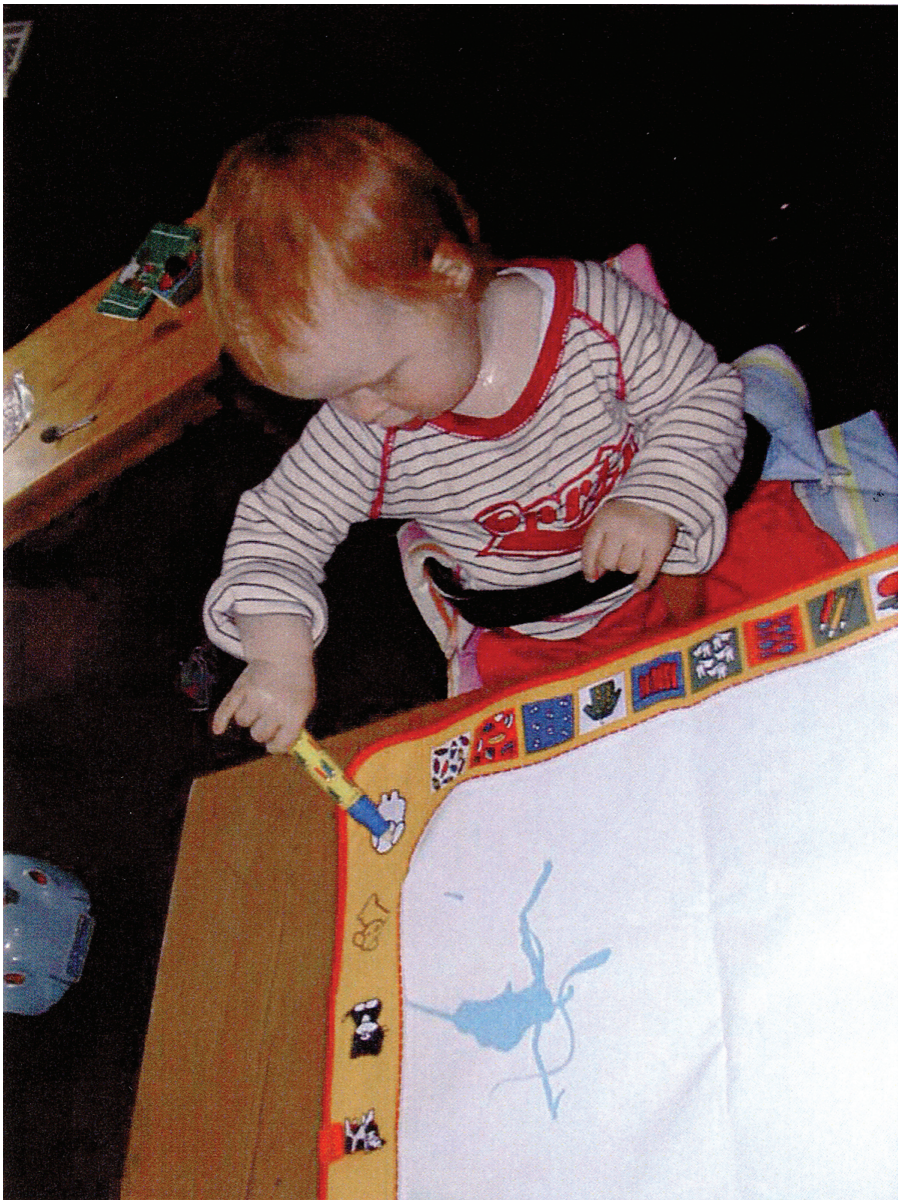


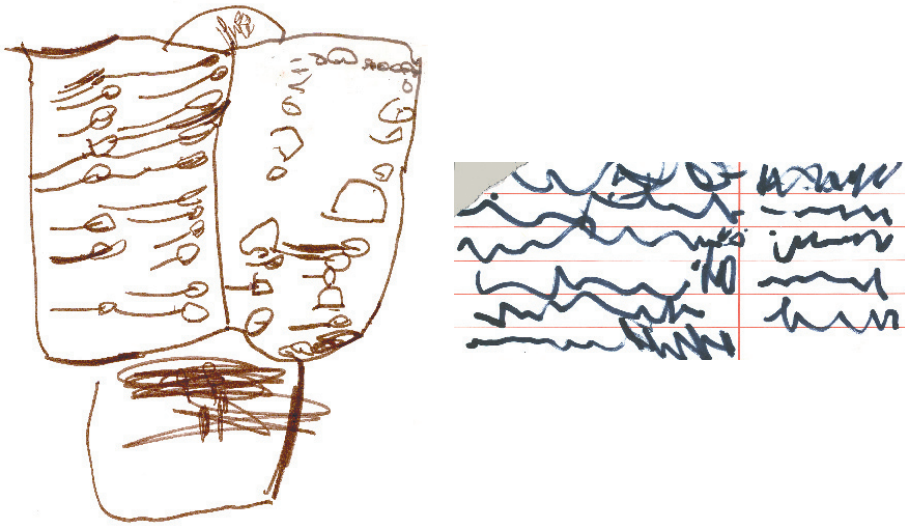
A toddler (1;6) on her baby writing table

1 EARLY WRITING: GRASPING THE CONCEPT

Introduction

"Mommy, what does it say?" asked four-year-old Iman, pointing to a series of letters that she had written down. Her mother sounded the letters out and blended them resulting in a non-word that made Iman laugh. From a very young age children show such behavior thus imitating literate people and provoking adult responses. The term *emergent literacy* is introduced to refer to young children's reading and writing behavior. A main assumption is that the acquisition of literacy is best conceptualized as a developmental continuum: Young children's knowledge about reading and writing results from continuous exposure to written text in their environment and to adults who read and write. This dissertation builds on the idea that long before children are able to read and write conventionally, they enter the complex and fascinating world of literacy and that their knowledge goes beyond imitation (Bus, 1995; Teale & Sulzby, 1986).

Growing up in a literate environment children familiarize themselves with the form and function of writing (Levin & Bus, 2003). Consulting the literature I came across numerous striking examples of behavior that implies knowledge about the function of written language. For instance, Neuman and Roskos (1997) observed a little girl sitting at the phone commenting: "I have to write it down, otherwise I will forget." Even the youngest kindergarten children seem to have acquired some knowledge about the written form. For instance, playing restaurant, police station or post office young children imitate writing-like forms, e.g. at home Nena (4;1) wrote a menu and Djamilo (4;11) a ticket, see Figure 1. With increasing age, children's knowledge goes beyond imitation of the written form as is illustrated by Djamilo (5; 2 year old). It confuses him that his mother's first letter (Twirre) is the same as his father's first letter (Taco) and one day he wondered if 't' from Taco is the same as 't' from Twirre. This child is no longer just imitating superficial aspects of literate behavior but seems to understand that letters, and particularly first letters of the name, symbolize meaning; he tries to figure out how letters relate to meaning and puzzling circumstances such as different persons with the same letter can then be solved.



Nena's (4;1) menu

Djamilo's (4;11) ticket.

Figure 1

Writing is a cultural tool, invented to represent non-figurative contents like proper names and abstract ideas (Zali, 1997). Some archaeological findings suggest that from the beginning sound features were used to represent abstract ideas. In about 3000 BC the Sumerian for instance represented 'ti' ('life') by drawing an arrow because 'arrow' and 'life' were homonyms in Sumerian language. Likewise the writing of proper names elicited other strategies than iconic representations and "the need for adequate representation of proper names finally led to the development of phonetization" (Gelb as cited in Ferreiro & Teberosky, 1982). So the ontogeny of writing looks diametrically opposed to the phylogeny. Children are familiar with form features of writing from a very early age prior to having any clue about their meaning or how these form features relate to a referent (Levin & Bus, 2003). They draw the two-dimensional object 'text' as they draw 'tomato' or 'mama' but their writing is not related to a referent. Children are not aware of "the double face" of letters, namely that letters represented by simple patterns of ink on paper, at the same time point at something beyond them" (Sebeok, as cited in Tolchinsky, 2003, p.5).

Once Young had figured out which parts of the text on the Rosetta stone were proper names he gained a clear understanding of phonetic features of hieroglyphics (Freeman Institute, 1985, Photo Gallery section). Afterwards Champollion was able to decipher the written code with the help of these proper names: 'Cleopatra,' 'Alexandrus' and 'Ptolemeus.' In a different way proper names may play an active part in young children's early writing development. For instance, in a longitudinal interpretative case study of her daughter Sarah in the age range of 2-5, Martens (1999) described the role and significance of the girl's name in getting to a deeper understanding of written language. Imitating

and memorizing her name, Sarah learned upper- and lower-case letters and she discovered the relationship between the orthographic and phonological features. Such seminal findings inspired me to study whether young children are able to write their name better than any other words, whether name writing improves more rapidly than word writing, and whether symbolic and phonetic writing is primarily prompted by the letters of children's own name.

Studies into early writing

Long before children enter school and formal instruction begins, children seem to have some insight in our written system. At the very beginning their writing may not go beyond mere imitation, generation of appropriate action plans and writing their proper name. Around age 4 children are able to sort correctly (their own) writing and drawing products (Bialystok 1995; Lavine, 1977; Levin & Bus, 2003; Tolchinky-Landsmann & Karmiloff Smith, 1992). Moreover, adult judges are able to sort children's activity as drawing or writing by looking at the type of pen motions. Smooth, circular motions indicate drawing, whereas writing consists of (predominantly) short, small strokes (Brenneman, Massey, Machado, & Gelman, 1996; Burrows, 1994). Children gradually familiarize with graphic features that are typical for writing and that make children's writing recognizable as writing. Building on previous writing studies (Brenneman et al., 1996; Lavine, 1977; Gombert & Fayol, 1992; Tolchinsky Landsmann & Levin, 1985), Levin and Bus (2003) developed a writing scale that includes basic *form* features such as small form, linearity and variety up to advanced *symbolic* features such as conventional letters and letters that represent phonetic features of writing. Fifty-two percent of the 2½ to 4½ -year-old children in their study "drew" writing by representing rudimentary form features such as small form; 34% also produced writing features such as segmentation, three or more units, complex form and variation; and 14% (mostly 4 year and over) used conventional symbols (letters or numbers) and letters that were phonetically used. The results supported earlier findings indicating an increase in representing linearity, segmentation, small form, a fixed number of units, letter-like forms, and conventional letters in the age range of 4½ and over (Gombert & Fayol, 1992; Tolchinsky-Landsmann & Levin, 1985).

Do children perceive writing as another notation system to convey meaning? Or do they continue to draw print as they draw 'flower' or 'rabbit' not intending to represent meaning till formal instruction in writing begins? Levin and Bus (2003) concluded that scores in a group of 2- to 4-year-olds on writing and drawing were substantially correlated, also when age was partialed out, suggesting that when children start drawing objects referentially they write by drawing "print", and that progress in object drawing involves progress in drawing print, so that their writing looks more like conventional writing. Children unable to communicate meaning by writing spontaneously resort to drawing or drawing-like devices, indicating the primacy of drawing as a representational-communicative system. Sorsby and Martlew (1994) reported similar results for a group of 4-year-olds making notes on the outside of envelopes in order to memorize their content. Children resort to drawing and neglect features of writing that they are aware of. Taking

these results together, the hypothesis is supported that children of this young age group face an irreconcilable dilemma - to represent the meaning of the word or to represent 'print.' This dilemma is sometimes solved creatively by confounding the two notational systems in conserving the features of writing and introducing drawing-like representations such as number of signs or color. Exploring the writing of pre-literate children at the start of the 20th century, Luria (Luria, 1929/1983) presented some case studies demonstrating that kindergarten children (6-year-olds) add drawing features such as colour or size to their writing of dictated sentences contrasting in meaning; the task was to memorize sentences. In his dictations Luria had interwoven contrasts in colour (black smoke), shape (the column is high), number (Lilya has two ears versus Lilya has one head), and size (the big hen and 4 little chicks) resulting in heavy black lines representing black smoke, a long vertical line for a high column, a long stroke versus a short stroke representing two ears versus one head, and one big line and four small ones for a big hen versus four little chicks. Ferreiro and Teberosky (1982) described that children represent size and number in writing; for instance, one girl assumes that her name becomes longer after her birthday. In contrast to Luria, these Argentinean researchers did not find evidence for shape or colour interwoven in written forms. Dictating words and sentences referring to colour ('a red flower'), form ('house' versus 'a child playing with a ball') and size (sky), Tolchinsky-Landsmann and Levin (1985) found effects of colour, number and form on writing products in a group of children aged 3½ - 5½. Their results indicate that children round 4½ added drawing features to their writings. Tolchinsky-Landsmann (2003) argues that *thus* children use writing as a system to represent meaning. How can it be explained that in Tolchinsky-Landsmann and Levin's study the oldest group, the 5-year-olds, added fewer drawing features to writing features than younger children although the drawing skills had improved?

Levin and Korat (1993) argued that preference for a semantic representation (i.e., longer letter strings for bigger objects) is most prominent among children who do not write invented spelling. They dictated word pairs composed of longer –sounding words denoting more objects versus word pairs composed of longer –sounding words denoting lesser objects. The 6-year-olds were the only group that represented word length correctly despite of a referent's meaning: They wrote 'zer' (bouquet) shorter than' pe'ax' (flower). Five-year-olds, on the other hand, did not succeed in representing word length correctly; words referring to more objects (e.g., zer) were written with more letters than words referring to one object (e.g., pe'ax). Results from Levin and Tolchinsky-Landsmann's (1989) study were similar; only six-year-olds represented the length of the word correctly. Five-year-olds did represent the length of words with more letters if in word pairs the longer word included the shorter one, i.e. sapar versus saparit (hair-hairdresser). Children keep representing number (for instance, three in three flowers) by repeating the same written string of letters or pseudo-letters three times well into the stage of phonetic writing, probably because this strategy is compatible with the form of writing. Kalid, a 6-year-old boy who was already aware that letters

relate to sounds in words, wrote for the word roda (= wheel) 'oa', and repeated this letter string four times when the request was to write four wheels (Tolchinsky-Landsmann, 2003). Ferreiro and Teberosky (1982) observed that children use letters of their own name to write new words, rearranging the order of letters. Children seem to understand that letters symbolize meaning preceding the stage that they produce phonetic writing. Are children inclined to write phonetically especially when tasks underscore the sound of words?

In a dictation of word pairs overlapping in sound (for instance, ta – mita), five- and six-year-olds represented this overlap. Half of the 5-year-olds and most 6-year-olds (about 75%) represented the overlap in orthography by selecting similar but not necessarily correct signs. The difference in word length was represented by 59% of the 6-year-olds and only 39% of the 5-year-olds. Four-year-olds made the same or completely different letter strings, drawings or characters that could not be unequivocally judged as either similar or different (Tolchinsky-Landsmann & Levin, 1987). In a similar study, Kamii and Manning (1999) dictated word pairs like water-watermelon. Over a period of five months, representation of overlapping word (parts) and word length increased but only a small proportion of the children selecting the correct phonetic letters. Children often selected wrong but similar letters for overlapping segments in word pairs which may indicate that children are aware of a relationship of writing and the sound of speech. On the other hand, this outcome can be accidental considering that children pick from a small stock of known letters (e.g., the letters of their name); as a consequence they often select the same letters.

In short the finding that children are able to differentiate between drawing and writing from a young age, and to produce some of the features of the written form, made researchers look for signals of developing knowledge of writing as a symbolic system. Iconic features in writing or representation of semantic features of dictated words tied together with writing features may indicate that children understand writing as a symbolic system (Kamii & Manning, 1999; Tolchinsky-Landsmann, 2003; Tolchinsky-Landsmann & Levin, 1987). Other researchers (e.g., Levin & Bus, 2003; Sorsby & Martlew, 1994) argued that young children's knowledge of writing is limited to implicit, procedural knowledge learned by imitation. Iconic features in writing (color, number or size) indicate that young children's writing and drawing are intertwined. In other words, writing is imitating the *form* of writing; children draw the two-dimensional object 'text' like they draw 'tomato' or more abstract referents like 'landscape'. At some point emergent writers make a shift from drawing writing to *symbolic writing*; they *redefine* writing (a phrasing introduced by Karmiloff–Smith, 1992). Following Tomasello (1999), I suppose that children make this shift from writing as a form of imitation toward writing as a symbolic representation when, as a result of social interactions between parents and children, children take a grown-up's perspective of their own behavior and cognition. Adults' comments like "Look, your letter" may draw children's attention to the symbolic features of writing. Young children internalize such implicit instructions through grown ups making

them conscious of a connection between letters and meaning. As a result, young children begin to understand the symbolic facets of writing and start to use these conventional symbols in a dictation (Treiman, Kessler, & Bourassa, 2001).

Studies into name writing

Young children first familiarize with the sound and written form of their name. Infants from 4½ months old recognize the sound patterns of their own name (Mandel, Jusczyk, & Pisoni, 1995). The proper name is also the first word children attempt to write (Clay, 1975; Temple, Nathan, Burris, & Temple, 1988). Ferreiro and Teberosky (1982) reported that middle SES Argentinean children, 4- to 6-year-old, (70%, $N = 47$) and some low SES children (21%, $N = 29$) wrote their name conventionally before they entered school. In the following section I will further explore: *1.* the development of the writing of the proper name, *2.* proper names as a source of letter knowledge, and *3.* the use of name letters in new words.

The writing of proper names may gradually evolve from rudimentary form features to conventional writing (Ferreiro & Teberosky, 1982). In a longitudinal case study, Martens (1999) illustrated how her daughter Sarah learned from her name. After a period in which she wrote her name as a logogram, Sarah began inventing her name. She wrote for instance her name as CAYI, (perhaps indicating that she attributed sounds to letters based on the letter names, such as C for /s). Likewise Zilva wrote 'LLZ' sounding out her name, months after she had started to write her name correctly. From interviewing children about their name writing, Ferreiro and Teberosky (1982) concluded that children could learn to write their name conventionally, treating this fixed string of letters as a whole composed of various parts, without understanding the reasons behind the order or selection of symbols. In line with this assumption, Villaume and Wilson (1989) reported that young children memorize the letter forms before they name the letters. Dictating their name children did not name the letters but they describe the form of the letters. They may, for instance, comment while writing: "...first a stick with a circle, then...." Do children's experiences with their own name boost knowledge about the letters of their name?

Researchers explored the hypothesis that preschoolers' name writing reflects emergent print knowledge and phonological awareness. Ferreiro and Teberosky (1982) suggested that children made "an extremely important shift" when they look for the correspondence between individual letters of the name and parts of the spoken name. For instance: 5-year-old Lorena wrote her name correctly. Confronted with a changed order of the letters in her name i.e. LOERNA, she said that '...it doesn't say Lorena, but this little piece (LO) says lo-re." I saw that five-year-old Djamilo read his name correctly but hesitated and read 'Djami' when only DJAMI was visible. Ferreiro and Teberosky did not report effects of name writing on other, not practiced words. Welsch, Sullivan and Justice (2003) concluded that successful name writing predominantly reflects alphabet knowledge and print concepts but not phonological awareness. Likewise, Australian first graders, U.S. kindergartners and U.S. preschoolers showed a significant superiority in knowledge of the initial letter of their own first name in tests of letter names,

but not in tests of letter sounds (Treiman & Broderick, 1998, Treiman & Kessler, 2003). In line with these findings Aram and Levin (2004) reported that Israeli kindergarten children named the letters of their name more often correctly than other letters of the alphabet. They found a similar superiority in knowledge for nearly all letters of the child's name and not just for the first letter. They concluded that the Hebrew-speaking children in their study gained more from their name than the English-speaking children in the study by Treiman and colleague's because Hebrew names differ from English names in two ways: 1. As Hebrew script has no capital letters the first name letter in Hebrew is not distinct in size from the other letters; see also Treiman & Kessler (2004) reporting that the uppercase letters inserted by kindergartners in a non-initial position were the initial letter of children's first name *2.* Hebrew names are shorter than English names. In a letter knowledge task, Serpell and colleagues (Serpell, Baker, & Sonnenschein, 2005) determined that knowledge of name letters is greater than knowledge of letters in general. When the children were in pre-kindergarten, 55% of them correctly identified the first letter of their name, and this figure jumped to 95% by the end of kindergarten. Bloodgood (1999) examined the letters that thirty 4- and 5-year-old children used in spontaneous writings over the span of a school year. Name letters comprised about half of the letters (41%) among the 4818 characters in 349 stories written by those children who used only random letters (i.e., letters that do not match to sounds in words). Comparing the proportion of name letters in children's writings, she tested for 4 letters (R, L, N, S) whether children who did have one of these letters in their first name, used these letter more frequently than children who did not have one of these letters in the first name. For each of the 4 letters she reported significant differences indicating that children with one of these letters in their name used this letter two times as often as children who did not. Other studies (Aram & Levin, 2001; Treiman, Kessler, & Bourassa, 2001) replicated and extended Bloodgood's results. They reported a similar effect for all letters of the alphabet, and not just for a small selection of letters.

Analyzing 8 studies Shanahan and colleagues (2005) reported substantial correlations ($r = 50$) between name writing and decoding and, based on three studies, a moderate correlation ($r = 36$) between name writing and spelling. In a longitudinal study, Dunsmuir and Blatchford (2004), exploring predictors of writing competence in a group of 4- to 7-year-old children, reported that name writing at school entry was significantly associated with writing at 7 years. Does phonetic writing start with the letters of a child's own name? Do children use name letters not only randomly but also phonetically motivated? Are the sounds of the letters from the own name among the first they recognize in new words? So far the literature does not give a favorable answer to these questions. Results reported by Treiman and colleagues (2001) contradicted the suggestion that phonetic writing starts with letters from the proper name. They found that phonetic spellings were not confined to letters from the name but included other letters as well. Treiman and colleagues (2001) compared children whose name contained a particular letter with children without the letter in their name.

Alternatively, one could calculate which proportion of letters in children's writing of new words is derived from their proper name and which letters are used phonetically or randomly.

Objectives and outline of the dissertation

As a result of continuous exposure to reading and writing in their environment and participation in literate activities, children develop knowledge of the form and content of written language long before they enter school (Teale & Sulzby, 1986). The studies presented here were designed to study the impact of two activities related to writing text, namely drawing and name writing, on young children's writing skills. In a series of studies we explored young children's knowledge about writing as a form and writing as a symbolic system to represent meaning.

Hypotheses for separate studies. The first study described in Chapter 2 reports how children of three different age groups (3½-4, 4-4½, 4½-5) wrote two sets of 8 words, one set with a particular purpose (making labels to memorize the content of boxes) and the other without (dictated words). In line with Levin and Bus (2003) We hypothesized that drawing and writing are closely intertwined for young children. When it is emphasized that writing should denote meaning children may focus less on representing the two-dimensional object print and more on representing the referent's meaning. As a consequence they may often resort to drawing thus neglecting features of writing of which they are aware, and as a result the distinction between writing and drawing dilutes.

The second study described in Chapter 3 tested the same hypotheses by secondary analyses of the data. Adults with no knowledge of the children's age and how the product was created sorted and named the writings produced in the first study. We expected that as a result of an emphasis on the readability of children's notes, an adult's ability to sort their products as writing or drawing will be distorted but these features may support adults' ability to name the products.

The third study, described in Chapter 4 reports the difference in name writing and writing dictated words in samples of children ranging from 2-5 years of age, with Hebrew or Dutch as their 1st language, and recruited from low- to high SES families. Many children are exposed to their written name at an early age and are encouraged to copy their names, to try to write them on their own, to name the letters in them, and so on. As a result we supposed that name writing is advanced compared with writing of dictated words.

The fourth study described in Chapter 5 reports how familiarity with the proper name influenced spellings of new words. Grown-ups provide children with fairly substantial amounts of direct instruction about letters as symbols talking about children's own or other people's letters and how they sound in words: "look, that's your letter" or "that's 'm' for mama." As a result, we expected, children may become aware of letters as symbols and use these letters ('my a') when they write other unpracticed words. More advanced children may start to use the letters of their name phonetically.

The fifth study described in Chapter 6 is a replication of the fourth study with somewhat older children from low SES families. Chapter 7 is a general discussion

of the results of the five studies. Chapter 8 describes which writing activities take place at home and at school.

Expected benefits: The studies reported here may help parents and teachers to interpret and react to children's concepts about writing. This series of studies highlights children's developing concepts of writing before formal instruction starts and the special contribution of proper names to this development.

Letters written by a 4;8-years-old girl.

2 EARLY WRITING: SIMILARITIES BETWEEN WRITING AND DRAWING[1],[2]

Abstract

Do young children understand that written forms differ from drawing and that writing does not include iconic devices? Does the development of symbolic and phonetic writing stagnate as children use iconic devices? In addition to a dictation as a test of early writing we included writing with a purpose (making labels to memorize the content of boxes) as the latter task more so than a dictation may entice young children into adding iconic devices. Three age groups (3½-4, 4-4½, 4½-5) participated. Children below 4½ often included iconic devices in writing especially when writing was used as a mnemonic device. With age the number of iconic devices to denote meaning diminished but not completely. Even beyond 4½, when they had started to write symbolic, children continued to represent iconic devices for number and color suggesting that children apply different, contradictory strategies simultaneously.

[1] If quoting the research in this chapter, please refer to: Both-de Vries, A. C., & Bus, A. G. (2006). *Early writing: Similarities between writing and drawing.* Manuscript submitted for publication.

[2] Our thanks to Inge de Groot for her assistance in the data-collection.

Introduction

The literature is not unambiguous about young children's ability to differentiate between writing and drawing. Brenneman and colleagues (Brenneman, Massey, Machado, & Gelman, 1996) argued that implicit knowledge about the structure of language and about three-dimensional objects is either innately specified or emerges very early, therefore facilitating a distinction between writing and drawing from the very start of making scribbles that go beyond scratching. When children write they use a set of discrete, linearly ordered, and unidirectional markings, because these features reflect the temporal code of language. In contrast, children use bounded and filled-in areas for drawings because they reflect efficiently objects' edges and surfaces.

Others have taken the position that emergent writers do not make a strict distinction between drawing and writing features (Levin & Bus, 2003). Beyond the stage of mere scribbling, children indeed include qualities in their writing that are more typical of writing than of drawing such as: linearity, unidirectionality, a minimum number of different signs that appear in various orders, the presence of distinct units, regular blanks, and the small size of graphic symbols (Clay, 1973; Ferreiro & Teberosky, 1982; Ferreiro, Pontecorvo, & Zucchermaglio, 1996; Tolchinsky-Landsmann, 1988; Tolchinsky-Landsmann & Karmiloff–Smith, 1992). However, the production of written forms is merely the drawing of the two-dimensional object known as "print" resulting in procedural knowledge of writing. The more children are advanced in drawing objects, the more they are advanced in drawing "print," that is in producing writing-like forms (Levin & Bus, 2003).

Having some knowledge of the written form at their disposal but missing the notion that writing is a notational system dictation of words may place children in a dilemma particularly when writing is used as a mnemonic device (Levin & Bus, 2003). They may resort to representing print, producing forms that have features of writing but ignore meaning and that are similar to forms they mostly produce when words are dictated for writing. Alternatively, when it is emphasized that writing should denote meaning children may focus less on representing the two-dimensional object "print" and more on representing the referent's meaning. As a consequence they may resort to drawing thus neglecting features of writing of which they are aware (Sorsby & Martlew, 1994; Tolchinsky-Landsmann & Karmiloff-Smith, 1992). It is also suggested that children may solve the dilemma – to represent the meaning of the word or to represent "print" - creatively by confounding the two notational systems: conserving the features of writing and introducing drawing-like representations such as number of signs or color (Luria, 1929/1983). Attempts to replicate Luria's results suggest that addition of iconic hints is limited to a small selection of features such as number and color (Levin & Korat, 1993; Levin, Korat, & Amsterdammer, 1996; Levin & Tolchinsky, 1989; Tolchinsky Landsmann, 1988; Tolchinsky & Levin, 1985). When word pairs contrasting in color, number, size, and form were dictated, children between 5 and 6 years always represented number (with a repetitive pattern), to an increasing extent the typical color (e.g. sun in yellow), to a decreasing extent form (circles for 'ball'), and rarely represented size (e.g., baby bigger than mother). We wonder

whether children continue to create such hybrid forms including iconic and written devices well into the stage that they have started to explore phonetic writing and begin to represent letters phonetically. Such outcomes would suggest that children use different, contradictory hypotheses simultaneously and that regression to iconic devices does not stop the development of new, more advanced strategies (Byrne, 1996).

In this study we tested whether, in the early stages, communication through writing is typically driven by object-related iconic devices just as drawing. As long as children know how to draw the two-dimensional object "print" but have not yet perceived writing as a communicative device, the request to write a particular word elicits a dilemma: representing the meaning of the word or representing "print." This dilemma may be solved by drawing; resorting to object-related iconic devices neglecting features of writing of which they are aware or by creating hybrid forms. Designing this study we suspected that children would often ignore the request to represent a referent and would stick to producing writing-like forms even though they do not yet perceive writing as a communicative device resulting in outcomes that are hard to interpret. To reduce the chance that children simply ignore the request to represent the referent's meaning and stick to drawing "print," we created a task that emphasizes the function of writing. The task, making labels for boxes to memorize their content, implied writing as a mnemonic device.

Method

Participants

Participants were 96 Dutch 3½ - to 5-year-olds. Each of three age groups was composed of 32 children, 16 boys and 16 girls. The youngest group was aged between 41 and 47 months (M = 43.9, SD = 1.8), the middle between 48 and 54 months (M = 51.6, SD = 1.7), and the oldest between 55 and 61 months (M = 57.2, SD = 1.6). The youngest children were recruited from three playgroups and children 48 months and older from 4 schools (in the Netherlands kindergarten starts on the day the child becomes 4 years old). When the teacher suspected that a child was developmentally delayed, the child was excluded. All children were from middle to high socio-economic status families. Two of the children originally selected were not willing to cooperate. In those cases sessions were discontinued and another child of similar age and gender was selected to replace the child. For each child a complete set of data was collected because the experimenter returned to the playgroup or school in those cases where children had been absent. As in most Dutch kindergartens, formal teaching of reading or writing including instruction of letters was not part of the curriculum of the play groups and schools.

Design

Children wrote and drew 16 words and we tested if similar iconic devices appeared in both forms. To enable us to observe the representation of object-related iconic devices in writing we selected word pairs varying in form, size, number, and color. We divided the 16 words in two sets each composed of 8 comparable words.

Both sets included two words contrasting in color, size, number, and form. Set 1 included: liquorices – snow (*color*), rabbit – man (*size*), ball – book (*form*), and flower - three flowers (*number*). Set 2: tomato – sun (*color*), baby – mother (*size*), wheel – box (*form*), and tree - three trees (*number*).

To strengthen the dilemma - representing the meaning of the word or representing "print" – we created a task that emphasized the function of writing (to memorize the content of the boxes). We called this task the *labeling* task. The other set of words was dictated without any explanation of the function of making notes. This task was called the *dictation*.

Half of each age group (16 children) used set 1 for the dictation and set 2 for the labeling task and the other half (16 children) used set 2 for the dictation and set 1 for the labeling task. The order of tasks, starting with dictation or labeling, was counterbalanced. Within each age group half of the children wrote and drew words in succession (e.g., "write tomato," "draw tomato") while the other half used one mode within each session: they drew or wrote all words of a set (e.g., "write tomato," "write sun").

Procedure

Assessments were spread over 4 sessions of 20 minutes. During the sessions the examiner met each child individually in a separate room. In the 4 sessions each child drew and/or wrote 8 words per session, in all they produced 16 products of writing and 16 products of drawing. For each product we supplied a separate sheet of blank paper. There was a choice of marker pens in seven colors: red, blue, yellow, green, brown, black, and pink.

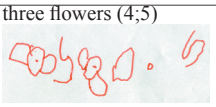
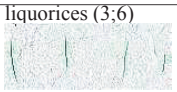
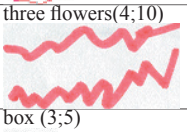
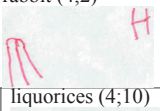
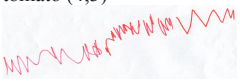
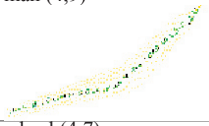
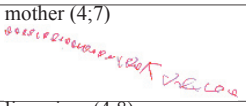
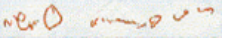
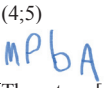
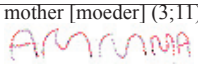
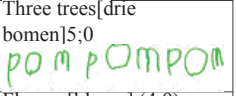
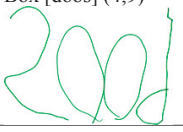
In the *dictation* the examiner asked the child to write or draw a word avoiding indefinite articles: "write/draw baby."

As an introduction to the *labeling task* the examiner wrapped up three objects, each in a separate box; for instance, a plastic tomato, a baby doll or pieces of liquorices. Next, the examiner explained that after the box was closed writing or drawing attached to the box would help to remember the contents of each box. The examiner placed objects representing each of the stimulus words in separate boxes, and asked the children to make writings and drawings on blank paper. After that the papers were glued to each box to remember its content. In advance children were told that presents were to be wrapped up in boxes but as the boxes were all the same, once the presents were inside, it would be difficult to know which box contained which present. Therefore children made written or drawn notes to memorize what they had put in the box.

Coding

To decide to what extent children's products of writing demonstrated writing-like characteristics, we coded all products of writing on a scale developed by Levin and Bus (2003). For each of the following features of writing we awarded one point: *1.* small good form, *2.* linearity, *3.* segmentation, *4.* complex form, *5.* at least three units, *6.* no variety or unintended variety, *7.* intended variation, *8.* at least one conventional symbol, *9.* at least one phonetic symbol, *10.* more than one

Figure 1. Products of writing including the feature mentioned in the left column. Numbers in parentheses are ages in years and months.

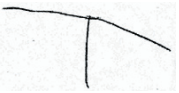
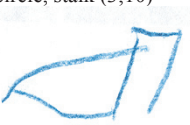
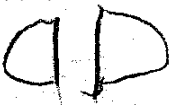
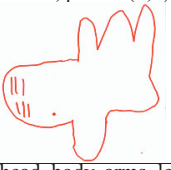
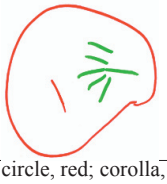
Writing feature	Stimulus (age in years and months)		
1 Small form	sun (3;8) 	flower (3;10) 	three flowers (4;5) 
2 Segmentation	liquorices (3;6) 	three flowers(4;10) 	rabbit (4;9) 
3 Linearity	rabbit (3;10) 	box (3;5) 	three flowers (4;7) 
4 At least three units	ball (4;3) 	three trees (3;3) 	flower (4;9) 
5 Complex form	rabbit (4;7) 	ball (4;5) 	rabbit (4;2) 
6 No variety or unintended variety	tomato (4;3) 	man (4;9) 	liquorices (4;10) 
7 Intended variety	mother (4;7) 	wheel (4;7) 	rabbit (3;8) 
8 At least one conventional symbol	liquorices (4;8) 	man (4;11) 	sun (5;0) 
9/10 One or more phonetic symbols	wheel [wiel] (5;0) 	tree [boom] (4;7) 	three trees [drie bomen] (4;5) 
11 Invented spelling (word is readable)	Box [doos] (4;10) 	mother [moeder] (3;11) 	Three trees[drie bomen]5;0 
12 Conventional spelling	Rabbit [konijn] (4;9) 	Box [doos] (4;9) 	Flower [bloem] (4;9) 

Note. Dutch translations are provided where one or more letters are phonetic.

different phonetic symbol, *11.* invented spelling, and *12.* conventional spelling; see Figure 1 for illustrations of each feature. The last 5 features are typical of symbolic writing, whereas the first seven features typify written form. A mean score beyond 7 indicates that children minimally use some conventional letters in their writing. Coding was carried out per stimulus; e.g., for all children *book* was completed before *tomato*. The stimuli were coded in random order. For a sample of children ($N = 21$) each producing 16 words in response to the request to write, the mean agreement between two coders (both authors) per word ranged from $r = .82$ (for 'three trees' and 'liquorices') to $r = 1.00$ (for 'book') (mean $r = .95$, $SD = .06$). The alpha reliabilities for set 1 and 2 were .96 and .97 respectively. For each child we calculated the sum score of 16 words (ranging from 0 to 16) on each feature of the writing scale. For a sample of children ($N = 21$) the agreement for the 12 writing features between the two coders ranged from $r = .87$ (for 'small form') to $r = .99$ (for 'conventional symbol') (mean $r = .94$, $SD = .04$).

A second scale, the drawing scale, was developed to code overlap between products of writing and drawing. We used children's drawings of objects to develop this scale. Like Levin and Bus (2003) we composed lists of features typical for each object. For tomato, for instance, the list included: circle, red, calyx, stalk, green stalk or calyx, and filling; see Figure 2. The number of features varied from 4 for simple figures (e.g., ball) to 17 for complex ones (e.g., man). Independent coding of products of writing with the drawing scale by the two authors resulted in a mean correlation of $r = .88$ for 96 writings produced by 6 children.

Figure 2. Drawings of three flowers, book, rabbit and tomato, illustrating the drawing scale. In the upper row relevant features are listed. Above each drawing is mentioned which object features were scored. Numbers in parentheses are ages in years and months.

Three flowers *object features: three, petal, stalk, green stalk, corolla; different colored petals and corolla, put on the bottom of the paper.*	Book *object features: square, letters, illustration, thickness.*	Rabbit *object features: head, body, arms, legs, ears, fur, whisker, eyes, nose, mouth, tail, nails, profile, two-dimensional arms, two-dimensional legs.*	Tomato *object features: circle, red, calyx, stalk, green stalk or calyx, filling.*
petal (3;6) 	illustration (4;4) 	body, arms (3;10) 	circle, stalk (3;10) 
three, petal, stalk (3;10) 	square, illustration (4;4) 	eyes, nose, mouth (3;10) 	circle, red, stalk (3;7) 
three, petal, stalk, corolla (4;10) 	square, thickness (3;10) 	head, legs, ears, eyes, nose, mouth, tail, nails (4;10) 	circle, red, stalk (4;3) 
three, petal, stalk, green stalk, corolla (4;7) 	square, thickness (4;8) 	head, ears, whisker, nose, mouth, profile (4;7) 	circle, red; corolla; green corolla (5;0) 
three, petal, stalk, green stalk, corolla, put on the bottom of the paper (4;8) 	square, letters, illustration, thickness (4;10) 	head, body, arms, legs, ears, fur, whisker, eyes, nose, mouth, tail, nails, profile, two-dimensional arms, two-dimensional legs. (4,10) 	circle, red; corolla, green corolla, filling (4;9) 

With the help of the scores on the drawing and writing scales, each product of writing was assigned to one of the following types of products: *drawing, hybrid form (confounding writing and drawing), illustration, or writing*; see Figure 3 for illustrations of each type.

Writings: products exclusively scoring on the writing scale,
Drawings: products exclusively scoring on the drawing scale,
Hybrid forms: products including drawing and writing features in one product, and
Illustrations: products including drawing and writing features but a separate drawing added to writing.

To make a distinction between hybrid forms and illustrations a new round of coding was necessary. Mean agreement between the two authors was .92 ($N = 80$).

Figure 3. Children's writing products categorized as *drawing, hybrid form (confounding writing and drawing), illustration, or writing*. Numbers in parentheses are ages in years and months.

[1 2] hybrid form including color [3 4] hybrid form including form [5 6] hybrid form including number

Results

Writing across age

All children produced written forms but their ability to do so improved with age as is indicated by an increasing number of writing features used to represent 'print'; see Figure 4. In the youngest group many children represented linearity (in 40% of 16 words), three or more signs (40%), small form (62%), and segmentation (54%) but hardly any other features; their writing often looked like pseudo-cursive scribbles. In addition to these features the middle age group also scored on complex form (41%), variation (47%) and intentional variation (38%). This often resulted in strings of pseudo-letters. The oldest children scored on a symbolic level: they included conventional letters and numbers in their writing (50%). Their writing was mostly not yet phonetic. A small proportion of the letters matched with sounds in spoken words (9%). Since scores beyond 9 (more than one phonetic symbol) were rare they are not represented separately from representing one phonetic symbol in Figure 4. A MANOVA with age as between-subject factor and repeated measures for the two tasks (dictated words and labels) revealed a statistically significant main effect for age (3 levels), F (2, 93) = 23.1, $p < .001$, $\eta^2 = .33$. Mean number of writing features represented in products of writing increased from 2.8 (SD = 2.3) in the youngest group to 4.9 ($SD = 2.3$) in the middle group and 6.5 ($SD = 2.0$) in the oldest group.

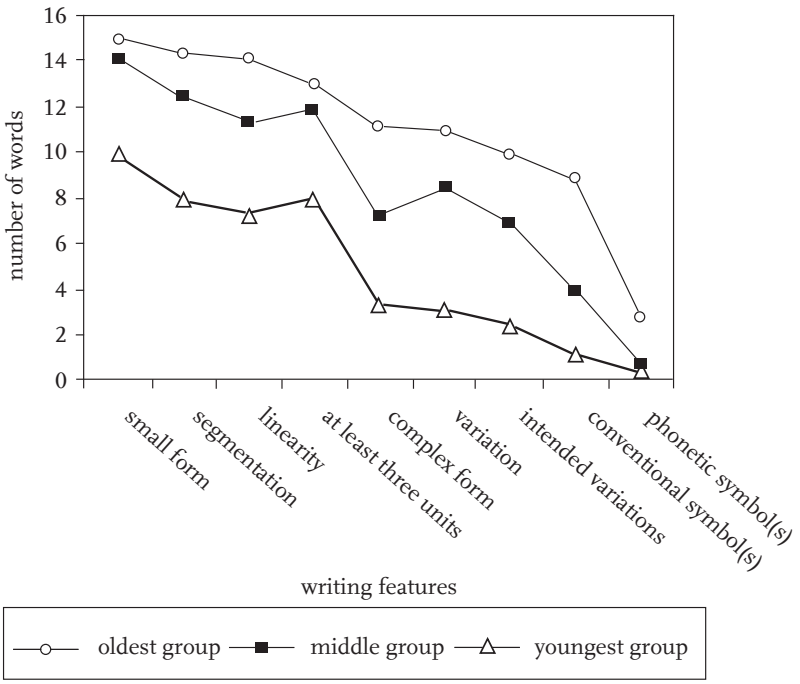


Figure 4. Writing features represented in children's products of writing for three age groups (maximum score = 16).

Overlap between writing and drawing

As writing improved the number of iconic devices decreased. Overall 5.4 (34%) out of 16 words (M = 34%, SD = 25) included one or more object-related iconic devices, see Table 1. With age the percentage of words including object-related iconic devices reduced from 43% (SD = 23) in the youngest group to 33% (SD = 29) in the middle group and 25% (SD = 19) in the oldest group. The Kruskal Wallis test (here preferred because of violations against normality) revealed a statistically significant age effect, χ^2 (2, N = 96) = 10.71, p < .01 (one-tailed).

Table 1. *Mean (SD) number of products coded as drawing, hybrid form, illustration or writing in three age groups (3½-4, 4- 4½, 4½-5) and two tasks (writing labels versus writing a dictation)*

Task	Type of writing product	Total group *N*=96	Youngest *N*=32	Middle *N*=32	Oldest *N*=32
Total (16 words)	Writing	9.4(5.2)	6.0(5.1)	10.3(5.2)	12.0(3.0)
	Hybrid form	2.7(1.9)	2.6(1.9)	2.6(1.9)	2.8(1.8)
	Drawing	1.9(3.3)	3.2(3.8)	2.1(3.7)	.4(.7)
	Illustration	.8(1.6)	.9(2.0)	.6(1.0)	.8(1.7)
Dictation (8 words)	Writing	5.0(2.7)	3.3(2.8)	5.5(2.7)	6.3(1.4)
	Hybrid form	1.3(1.3)	1.2(1.5)	1.2(1.2)	1.4(1.2)
	Drawing	.8(1.6)	1.5(1.9)	.7(1.8)	.1(.3)
	Illustration	.3(.9)	.5(1.2)	.4(.9)	.1(.3)
Labels (8 words)	Writing	4.4(2.9)	2.7(2.8)	4.8(2.8)	5.7(2.1)
	Hybrid form	1.4(1.1)	1.4(1.1)	1.4(1.2)	1.4(1.0)
	Drawing	1.2(2.0)	1.8(2.3)	1.4(2.2)	.3(.6)
	Illustration	.4(1.1)	.4(1.0)	.2(.4)	.7(1.5)

Note. Maximum score for total is 16, for dictation and labels 8.

However, we also found support for our suspicion that children often ignore the request to represent meaning. As the task characteristics entice young children into adding iconic devices they were more inclined to do so as is indicated by the finding that the task affected the number of object-related iconic devices especially in the two older groups. When writing had to denote meaning children focused more on representing iconic devices. All age groups produced more products including object-related iconic devices in the labeling task than

in the dictation, but in the youngest group (M = 46%, SD = 29 versus M = 39%, SD = 25) the difference was not statistically significant. In the middle group (M = 37%, SD = 38 versus M=29%, SD = 31) and oldest group (M = 27%, SD = 23 versus M = 19%, SD = 16) differences were statistically significant; Z = -1.79, p < .04 (one-tailed), N = 32 and Z = -1.96, p < .03 (one-tailed), N = 32, respectively. Taking a more careful look at the kind of products we concluded that drawings gradually disappeared but that the number of hybrid forms and illustrations remained about the same which suggests that though iconic devices as a means to represent meaning became less dominant, they did not entirely disappear in the here studied age range. They continued as hybrid forms or illustrations. Only drawings disappeared with age. They occurred significantly more frequently in the youngest and middle group than in the oldest group who hardly produced any drawings. Overall making labels yielded more drawings (M = 15%, SD = 25) than a dictation (M = 10%, SD = 20), Z = - 2.54, p < .01 (one-tailed), N = 96, but only the middle group produced significantly more drawings in the labeling task (M = 18%, SD = 28) than in the dictation (M = 9%. SD = 23), Z = -2.23, p < .01 (one-tailed), N = 32.

Features triggering hybrid forms

When referents included number (three trees and three flowers) children often created hybrid forms by repeating the same pattern to represent number; three in the form of three scribbles or three signs was present in 39% (SD = 39) of the writings that were meant to represent three trees or three flowers. For the four referents with a characteristic color (i.e., snow, liquorices, tomato and sun) 21% (SD = 22) was written in a suitable color (i.e., white or yellow, black, red and yellow). On the other hand, children rarely represented a square or round form for book and/or box and ball and/or wheel; in 7% (SD = 7) of the written representations for these referents. According to a Friedman Test the difference between number (proportion of representing three in three flowers and three trees), color (proportion of representing black for liquorices, white or yellow for snow, red for tomato and yellow for sun) and form (proportion of representing 'round' in ball and wheel and 'square' in book and box) was significant, χ^2 (2, N = 96) = 35.76, p < .01. Number and color were represented in all age groups to the same extent according to a non-significant Kruskal Wallis tests, see Figure 5. In so far children represented form (e.g. a round form for ball) they were more typical for the youngest children. Representing form disappeared in the older groups according a significant Kruskal Wallis test, χ^2 (2, N = 96) = 16.13, p < .001. In short, hybrid forms including number and colour features continued over age and but the ones that included form features disappeared.

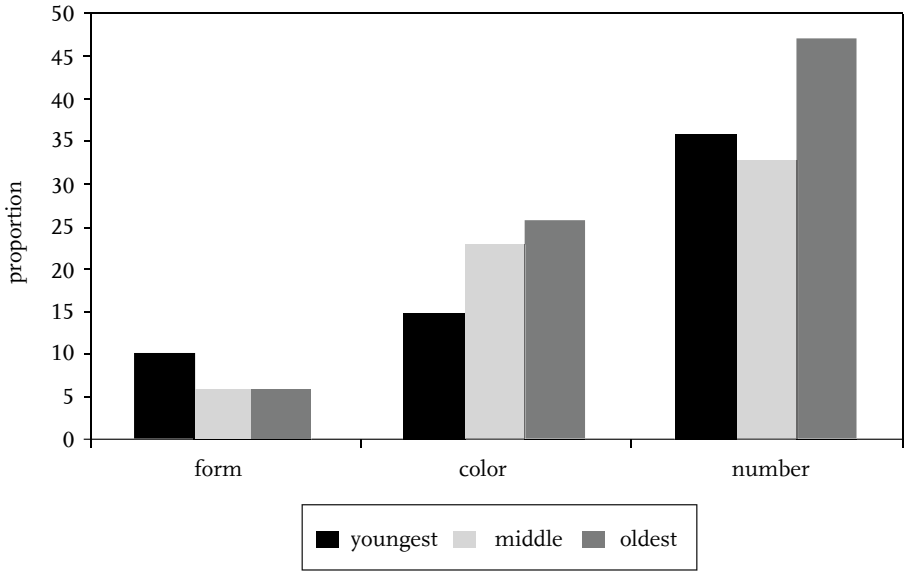


Figure 5. Mean proportion of hybrid forms with words including form, color, and number features by age group.

Discussion

The results confirm Brenneman et al.'s (1996) hypothesis that children successfully produce forms that represent aspects typical for writing. The youngest children produce characteristics such as small form, segmentation, linearity, and more than three units resulting in writing-like forms like pseudo-cursive scribbles or strings of pseudo-letters. Children's ability to represent the form of writing gradually improves and beyond 4½ children's writing includes conventional letters, often randomly selected and sometimes matching phonetic features. We did not find support for the hypothesis that children make a strict distinction between writing and drawing from an early age (Gombert & Fayol, 1992). The youngest group added iconic features to about half of the words (43%). Somewhat older children, 4 to 4½-year-old, were more successful at creating the impression of writing, but 34 percent of their writings included iconic features. Children beyond 4½ were less inclined to revert to iconic devices even when the task created a dilemma by strongly emphasizing the referential-communicative function of writing. In this group the number of products including iconic devices had diminished to less than 25%.

Drawing instead of writing disappeared within the present age range which shows that children make a clear distinction between writing and drawing as communicative devices. Children younger than 4 often replaced writing by drawing (21% of all writing products) but beyond 4½ drawings were very rare (2% of all writing products). In the stage in between (4-4½) children were quite advanced in producing the written form but they continued to mix up writing and drawing as notational devices. They regress into drawing as the mnemonic

function of writing is emphasized. To represent meaning this age group resorts to drawing (18%) when the referential function of writing was strongly emphasized. They stopped doing so in the dictation when they could ignore the request of readable writing and "draw" the written form (c.f. Levin & Bus, 2003). Whilst different from drawing, *hybrid forms* and especially those including number and color features, seemed to continue well into more advanced stages of writing when children begin to use conventional letters and numbers. All age groups produced a number of hybrid products scoring on the writing and drawing scale but in the oldest group these forms made up the majority of products that included iconic devices (70%). Some iconic devices namely those representing the referent's form (circle or square) occurred in the younger groups but disappeared with age. Older children who started to use conventional symbols seem to mix up iconic symbolizations as number and color with more advanced writing features such as phonetic writing, probably because their everyday experiences do not eliminate this misunderstanding. Number is often represented in an iterative analogical format (see for examples Tolchinsky, 2003, p.123); color is a frequently occurring feature of texts in advertisement. Children may therefore expect those facets to be aspects of conventional writing. Moreover, advanced writing features like conventional letters and phonetic writing are easily combined with representations of number and color, see in figure 1 the invented spelling of three trees: an iterative format, written in green. The same holds for illustrations. They also continue well into the stage of symbolic writing probably because illustrations often coincide with written text, for instance in picture storybooks.

In sum, from an early age children are familiar with features of writing but this does not imply that they use writing as a notational device. We find that it is only when children are quite advanced in producing written symbols that they stop replace writing by drawing indicating that children only gradually realize that letters and not iconic devices represent the referent in writing. Children beyond 4½ no longer revert to drawing when the request is to write although even children of this age group continue to use iconic devices such as number and characteristic colors. In other words, children on the verge of integrating new cognitive knowledge use multiple strategies (Kamberelis, 1994), mixing up iconic symbolizations as number and color with linguistic symbolization, i.e. phonetic writing. We reported age limits but we can imagine that those vary per sample. The present sample selected from higher educated families may be far ahead of the main stream.

3 IS WRITING OF YOUNG CHILDREN RECOGNIZABLE FOR EXPERTS?[1],[2]

Abstract

Adults with no knowledge of the children's age and how the product was created, sorted and named 1536 products of writings and drawings, from 96 children. There were three age groups (3½-4, 4-4½, 4½-5). The findings show that children as young as 4 years were able to produce graphic forms that included characteristics of writing and that could be sorted accurately as writing. The data also indicated that readability decreased as writing became more symbolic. In so far as children produced phonetic writing it was at most one letter and therefore not supportive of naming scores.

[1] If quoting the research in this chapter, please refer to: Both-de Vries, A. C., & Bus, A. G. (2006). Early writing: Similarities between writing and drawing. Manuscript submitted for publication.

[2] Our thanks to Willemieke de Jong for her assistance in data collection.

Introduction

In the previous chapter we tested whether, in the early stages, communication through writing is typically driven by object-related iconic devices just as drawing. As long as children know how to draw print but have not yet perceived writing as a communicative device, the request to write a particular word creates a dilemma: representing the meaning of the word or representing "print." This dilemma may be solved by drawing: resorting to object-related iconic devices neglecting features of writing of which they are aware. We expect the former effect especially when the task implies writing as a mnemonic device. We therefore created a task that emphasized the need to write in a readable manner.

The same hypotheses were tested by secondary analyses of the data. Experts sorted the products of writing as writing or drawing and named the products. We expected that experts would be able to recognize writing to some extent right from the earliest age. We also expected that sorting of dictated words would be easier than sorting of labels because making labels children may replace writing by drawing. Assuming a decrease of drawing instead of writing we expected that, with increasing age, writing would be recognizable whatever the task characteristics. We expected that experts would not be very successful in naming writings of children in the age range studied here but to the extent that they were successful, success was more likely in the younger rather than the older group. Younger children may often replace writing by drawing and that may help to identify the meaning of the product. Phonetic representations may be included in older children's writing but their minor form and incidental occurrence might not be sufficient to support naming.

Method

Experts

Sixteen experts evaluated the products of Study 1 (see Chapter 2) in 3 different tasks. Without exception, these experts were professionals familiar with young children's writings and drawings, being kindergarten teachers, staff developers, or researchers. On average they had 14 years of experience in these professions.

Tasks

Each expert did 3 tasks, each time evaluating a different set of products or a different selection of children from Study 1. Thus, 16 experts sorted and named all 1536 products.

Task 1: Sorting products representing one referent.

Each expert sorted the 192 drawings and written versions of all 96 children for one stimulus into 4 piles: "I think this is a drawing" or "I think this is writing"; and in case they were less certain: "I guess this is drawing" or "I guess this is writing." They were awarded 3 points when the sorting was correct without any doubt, 2 points when the sorting was correct but included some doubt, 1 point when the sorting was incorrect with some doubt, and 0 when it was incorrect without any doubt. All 16 products of each child were thus sorted but each product was sorted

by a different expert. We calculated a mean score per set. Alpha reliabilities for writing were .89 (set 1) and .89 (set 2) and for drawing .68 (set 1) and .78 (set 2).

Task 2: Sorting all products of one child.
Each expert sorted the 32 written versions and drawings of one child presented in random order adding the same qualifications as in task 1. Each expert sorted the products of 6 children, two from each age group. Thus, all children were sorted once. Scores on writing and drawing were very similar because the experts were aware of the equal number of written versions and drawings per child. We used therefore the mean score for writing and drawing. Alpha reliabilities for set 1 and 2 were .62 and .88.

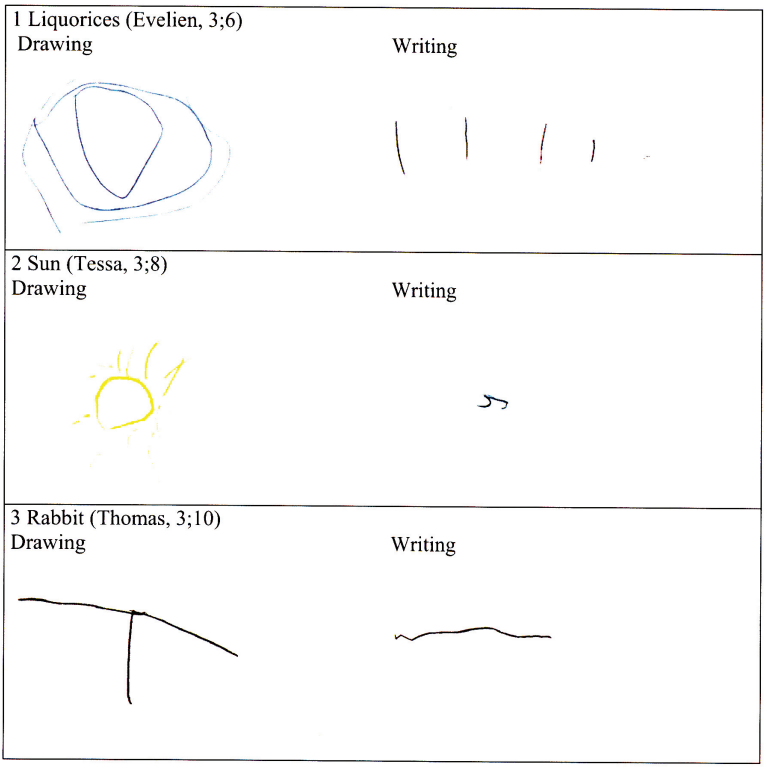
Task 3: Naming written versions and drawings.
For another selection of 6 children (two from each age group) each expert matched written versions or drawings with the sixteen stimuli. This task was carried out for each of six children and for writing and drawing separately. Naming drawing preceded naming the written version. For each child and each mode, the number of correct matches was tallied per set (the maximum score was 8). Alpha reliabilities for writing were .74 (set 1) and .77 (set 2). Alpha reliabilities for drawing were .73 (set 1) and .77 (set 2).

Design
All experts started with Task 1, which was the only task during the first session. In the second session 8 experts completed the other tasks, i.e. Task 2, Task 3 (drawing), and Task 3 (writing), in this order. The other 8 experts continued with Task 3 (drawing) and Task 3 (writing) in a third session. Three students presented the task to the experts, in the expert's home, in school or in the university laboratory. There was no time pressure.

Results and Discussion
The results support the hypothesis that, from an early age, children succeed in giving the impression of writing. Making two piles of all 192 products representing the same referent (Task 1) experts were least successful in the youngest group because these children mostly drew and rarely attempted to write. In the older groups experts had far fewer problems in distinguishing writing from drawing, indicating that children in this age range, compared to the youngest group, were familiar with features of writing. Experts put most words written by the oldest and middle children on the pile 'writings without any doubt.' With increasing age, children became better at creating writing-like products. According to a significant Kruskal Wallis test, χ^2 (2, N = 96) = 26.13, $p < .001$, older children's writing were better sorted. Mean scores per word for the oldest, middle and youngest group were 2.72 (SD = .39), 2.37 (SD = .80), and 1.85 (SD = .72), respectively. Younger children reverted more to drawing when a dilemma – representing the written form or a referent's meaning – was created for them by task features. Binomial tests were used to compare the number of children whose products were sorted at

above or at chance level. The chance score was set at 1.5: the mean score when all four alternatives (0 = incorrect without any doubt, 1 = incorrect with some doubt, 2 = correct but with some doubt, and 3 = correct without any doubt) were chosen as often. The middle group scored at above chance level on dictated words (M = 2.49, SD = .76) and on labels but only when the writing session started with a dictation (M = 2.78, SD = .30). By contrast, they scored on chance level with labels as they first wrote labels during the test (M = 1.93, SD = .93). These results are in line with our hypothesis that emphasizing writing as a mnemonic device tempted the children in this age group to make drawings and to give up a written device. A similar effect did not occur in the youngest group probably because they always produced numerous drawings instead of writings or because features of writing were not yet very pronounced. The oldest group always scored at above chance level indicating that, even when writing was emphasized as a mnemonic device, their writing represented features clearly different from drawing.

Figure 1. Children's writing and drawing products of the same dictated word illustrating differences that even the youngest children represented in their products of writing and drawing.



Even the youngest group was acquainted to some extent with features of the written form. Sorting *one* child's products into two piles - one for writing and one for drawing - (Task 2) sorting was always at above chance level for the middle (M = 2.40, SD =.50), oldest (M = 2.66, SD = .32), and even for the youngest group (M = 2.01, SD = .52). Experts were probably more successful at sorting writing and drawing because minor signs characteristic of writing such as small form attracted more attention, as products of the same child could be compared with each other. Figure 1 presents three youngest children's writings and drawings of the same referent. All examples illustrate that writings were smaller than drawings; note however that this feature became less striking in the figure as drawings were scaled down more than the writings. Examples 1 and 3 also illustrate that writing features like linearity (example 1 and 3) and segmentation (example 1) were more conspicuous when products could be compared with each other than viewed apart.

This set of data also supported the conclusion that success in naming products of writing mainly resulted from iconic symbols in the beginning stages of symbolic writing. Overall, the number of correctly named products (Task 3) was low for the oldest, middle and youngest group; out of 16 words the three groups scored 2.75 (SD = 3.62), 3.31 (SD = 2.70), and 2.50 (SD = 1.83), respectively. Binomial tests were used to compare the number of children whose products were readable at above or at chance level. The chance of matching one of 16 referents and one of 16 products correctly was 1/16 per product; for 16 products the chance of correct matches was therefore 1. In the middle group (M = 2.13, SD = 1.93) naming was at above chance level ($p < .05$) for labels but only when children first wrote labels in the test sessions. By contrast, dictated words and labels written after dictated words were named at chance level. When the task and/or task order emphasized the need to write in a readable manner, the middle group often included iconic features in writing, which may explain why experts succeeded in naming products of this age group at above chance level. In the youngest and oldest group experts never succeeded in naming products of writing at above chance level, but probably for different reasons. The youngest group included drawing in writing but these products missed details that allowed recognition. The oldest group, by contrast, produced written-like forms but apparently without any transparent relationship between written form and meaning.

Are experts better able to name words in the beginning stages of invented spelling? To answer this question we tested whether experts were more successful in naming words when the words included one or two phonetic letters. Experts were indeed somewhat more successful in naming words with one or two correct letters but the proportion of correctly named words was not significantly higher. In all, there were 906 words coded as writings from which 104 (12%) included phonetic features (scoring on 'one or two phonetic letters' or on 'invented spelling'). From the words that were written phonetically 16% were named correctly, whereas from the words without phonetic features 9% were correctly recognized. According to a Fisher Z, this difference was not statistically significant. Even though experts knew which words were written, the one or two

correct letters did not support word recognition. It is our impression that most children selected letters from a small set of familiar letters at the start of symbolic writing. As a result, similar letters returned in many words suggesting a random selection of letters. Inspecting the set of words for relevant cues, experts may have noticed the similarity in letters and therefore ignored letters as cues. In all, the present findings suggest that a shift from writing-like forms to symbolic writing does not make children's writings readable. A shift to symbolic writing makes children's notations less readable.

Names written on a cactus, Temple Valley, Agrigento, Sicily, July 2004.

5 NAME WRITING: A FIRST STAP TO PHONETIC WRITING?[1]

Abstract

This study aimed to test how name writing affects young children's writing. In the analyses we focused on a subgroup of Study 1 (see for description of subjects and tasks Chapter 2): We selected children producing strings of conventional letters (N = 35). All children wrote their name as well as a set of 16 mostly unpracticed words like baby and flower. Testing how familiarity with the proper name influenced spellings of unpracticed words, it appeared that most letters used to represent these new words (52%) were letters from the proper name and, more importantly, the first letter of the name was the first one to be written phonetically.

[1] If quoting the research in this chapter, please refer to: Both–de Vries, A. C. & Bus, A. G. (2006). *Name Writing: A First Step to Phonetic Writing? Does the name have a special role in understanding the symbolic function of writing?* Manuscript submitted for publication.

Introduction

Children develop knowledge about writing from an early age. When asked to write a word or sentence young children do not hesitate to make some writing-like scribbles. Ferreiro and Teberosky (1982) were among the first to show that children develop knowledge of the form and content of written language, presumably as a result of continuous exposure to writing and reading in their environment. This study aimed to test how increasing familiarity with their proper name affects the way children write unpracticed words. We tested *1.* whether children use letters of the name more often than other letters in random letter strings and *2.* whether letters from the name more than other letters are first used phonetically.

Taking into account that name writing in the preschool stage is one of the best predictors of conventional literacy in school age one may expect the name to play a special role in understanding the referential function of writing (Strickland & Shanahan, 2004). Many children first familiarize with their proper name. Prior to other words, children's writing of their own names is identifiable as writing (Levin, Both-de Vries, Aram, & Bus, 2005). Furthermore, their proper name is among the first words that children can write conventionally (Levin et al., 2005). However, writing the proper name does not automatically imply understanding of the alphabetic principle i.e. grasping the idea that the letters of printed language stand for the individual sounds of spoken language (Byrne, 1998). The first letter of the name or the complete letter pattern is often memorized as a logogram. "Does a David live here?" asked four-year-old David when he saw a name target with a ´D´ on a front door. Dictating their name children may not name the letters but describe the letters' form. They may, for instance, say "first a stick with a circle." Young children memorize the letter forms before they name the letters (Villaume & Wilson, 1989).

The way grown-ups react to name writing (for instance, recognizing the name and reading it aloud) may stimulate a shift in children's procedural knowledge of writing, eventually resulting in phonetic writing (Levin & Aram, 2004). In joint attentional scenes like name writing grown-ups stimulate children to reflect on their rudimentary writing activities, which may improve children's understanding of basic concepts of writing (Tomasello, 1999). As grown-ups read the name, children begin to reflect on what makes writing readable and they may isolate features of their performance relevant to that success. As a result, children may become aware of letters as symbols and use these letters ('my a') when they write other unpracticed words. We hypothesize therefore that children's understanding of writing as a symbolic device starts with letters from their name. Grown-ups also provide children with fairly substantial amounts of direct instruction about letters as symbols talking about children's own or other people's letters and how they sound in words: "look, that's your letter" or "that's the 'm' from mama" (Levin & Aram, 2004; Welsch, Sullivan, & Justice, 2003). Grown-ups unintentionally instruct children on how letters of the name sound in words, thus stimulating phonemic awareness with letters from the name (Ehri & Wilce, 1989; Frost, 2001). We hypothesize therefore that phonetic writing starts with the letters

of a child's own name, whatever those letters are. However, so far the literature does not provide unanimous support for this hypothesis. Treiman and Broderick (1998) found that English-speaking children do not necessarily know the letter sound for the first letter of their own name, even when they show a relatively good knowledge of the conventional label of this letter. That is, a child named Victor is likely to be better than a child named Susan at saying the letter name V, but not at saying the corresponding sound /v/. This leads to the prediction that Victor wouldn't spell /v/ better than other letters when making attempts to write words. On the other hand, another study found that young speakers of Hebrew show elevated levels of letter-sound knowledge for the first letter of their own name (Levin & Aram, 2004). This would predict that spelling might be better for that letter. In a group of kindergartners and first and second graders, Treiman and colleagues (2001) found that early phonetic spellings not only include letters from the name but other letters to the same extent. We guess that phonetic writing starts with letters of the name but that it is only for a short period restricted to those letters. In Treiman's sample (Treiman et al., 2001), an effect of name letters may not have become manifest because children just starting to write phonetically were mixed with a somewhat more advanced group.

Several studies reported that young children select letters from their own name when they compose texts or write down words that are dictated (Aram & Levin, 2001; Bloodgood, 1999; Treiman, Kessler, & Bourassa, 2001). Bloodgood (1999), for instance, reported that 41% of the letters written by 30 kindergarten children in 349 texts were letters from their own name. Children may prefer these letters to other letters from the alphabet because they are aware that the letters from the name symbolize meaning (Sulzby, Barnhart, & Hieshima, 1989). For instance, children may have experienced grown-ups being able to recognize their name writing. Another possibility is that the sounds of name letters are recognized in spoken words prior to other letter sounds because children often practice rhyming with names and sounding out name letters. Grown-ups may sound out letters of the name more often than any other letter: that's 'p' of Peter. However, as letters from the name are known to be selected randomly it is hard to decide whether these letters are used phonetically. Letters of the name may indeed match sounds of dictated words but their selection to represent a referent can be purely accidental. Treiman and colleagues (2001) characterized those letters therefore as being used *ambiguously* thus leaving open the possibility that letters from the name were selected by chance even though their sounds matched sounds in words.

This study was designed to test whether symbolic writing (using conventional symbols such as letters or numbers) and phonetic writing (some letters represent sounds audible in the spoken referent) are prompted by the letters of children's own name. Studies into effects of name writing on young children's writing predominantly examine whether representing the first letter of the name in spellings of words that contain that letter is more common for children whose names indeed begin with that letter. However, studying phonetic writing in this way it is overlooked what Treiman and colleagues named ambiguous use of name

letters. For example, when Peter adds a 'p' to all dictated words it is plausible that his writing of 'p' in words with this sound is by chance and not because the sound of the letter was recognized in the spoken word. Therefore, to test the effect of name letters on phonetic writing we preferred an alternative strategy. Per child we calculated *1.* which proportion of letters was derived from their own name and *2.* which proportion of those letters was used ambiguously (the letter is indeed part of the correct spelling but the child may have selected the letter randomly) and which proportion randomly (the letter is selected though it is not part of the correct spelling). As name letters are as often used ambiguously as randomly, it is plausible that these letters were not selected because children had recognized the sound in the spoken words. By contrast, if ambiguous use of letters from the name statistically significantly exceeds random use we can make a reasonable case for the assumption that the letters of the name are mostly not selected by chance but because children have recognized the sound in the focal word. Hence we coded for each child random and ambiguous use of letters. For instance, when Oliver adds 'o' to a letter string that represents one of two dictated words that indeed include 'o' ('zon' or 'tomaat') the percentage of ambiguous 'o''s is 50%. The same child produces 'o' in the letter strings meant to represent 14 other words without 'o' (e.g., baby, man). His score on random 'o''s is therefore100%. We tested: *1.* whether children used proportionally more name letters than letters not from the name; *2.* whether the proportion of ambiguously written name letters exceeded the proportion of randomly written name letters; and *3.* whether the proportion of ambiguously written letters not from the name exceeded the proportion of randomly written letters not from the name. If symbolic writing (using conventional letters or numbers to represent a referent) starts with letters from the name we can expect in a group rarely producing phonetic writing that symbolic writing includes a substantial number of letters from the name. If phonetic writing starts with letters from the name we can expect that these letters are, contrary to other non-name letters, more frequently ambiguous than random. This hypothesis was tested in a group that had started to produce phonetic writing but only sparsely (one phonetic letter in a few dictated words). This effect may be restricted to the first letter of the name, because that letter is named and sounded out in daily life more often than other letters (Levin & Aram, 2004). As children thus grasp that letters relate to sounds the number of phonetically used letters widens at a great pace and this name effect soon disappears.

Method

Participants

We selected 35 children in the age range of 46-61 months (M = 55.0, SD = 3.4) from Study I (see Chapter 2) that included 96 children from 3½ to 5 years of age. In this study the youngest children were recruited from three playgroups and children 48 months and older from kindergarten classrooms in 4 different schools (in the Netherlands kindergarten starts on the day the child becomes 4 years old). As usual in Dutch kindergartens, formal teaching of reading or writing including instruction of letters was not part of the curriculum. All children were

from middle to high socio-economic status families. When the teacher suspected that a child was developmentally delayed, the child was excluded. The 35 selected children used conventional symbols in more than half of the 16 dictated words but the products rarely were conventional or readable invented spellings.

Stimuli

Besides their proper name children wrote and drew 16 unpracticed words: liquorices, snow, rabbit, man, ball, book, flower, three flowers, tomato, sun, baby, mother, wheel, box, tree, and three trees.

Procedure

Assessments were spread over 4 sessions of 20 minutes. During the sessions the examiner met each child individually in a separate room. Each child drew and/or wrote 8 words per session, in all they produced 16 products of writing and 16 products of drawing. In the dictation the examiner asked the child to write or draw a word avoiding indefinite articles: "write/draw baby." We will not report about the results of drawing. In the first session children also wrote their name.

Coding

For the name and each of 16 dictated words we coded the number of words in which children had used conventional symbols and the number of words in which one or more letters were correct. Agreement between two coders (both authors) on one or more conventional symbols,' 'one correct symbol,' and 'two or more correct symbols' was .99, .94 .93, respectively.

Next we coded per child and per conventional symbol: *1.* if the letter was a (first) letter from the name or any other letter (below referred to as: non-name letter); and *2.* if the letters were used randomly or ambiguously. We calculated in percentages how often children had used a (first) letter of their name ambiguously or randomly by dividing the number of words in which children had used a (first) letter of their name ambiguously or randomly by the number of words that did or did not include the first letter. This resulted in two scores per name and non-name letter: random use and ambiguous use. The same calculation was done for non-name letters that appeared in children's writing. For example: Sandra's used the first letter of her name in her written representation of two out of four words that indeed includes an s/z-sound (i.e., dropjes [liquorices], sneeuw [snow], doos [box], and zon [sun]). This score resulted in a 50% score for *ambiguous* use of the first letter of the name. Sandra also used 's' in ten of the twelve other words that do not include 's' (e.g., moeder [mother], baby [baby], etc.) resulting in a 83 % score on *random* use of the letter 's.' The same coding was done for each of the other letters in Sandra's name, i.e., for 'a,' 'n,' 'd,' and 'r ,'and for the letters 'm,' 'o' and 'f' that are not letters from her name but that she used as well in her written representations of dictated words. We tested the difference between ambiguous and random use of letters for *1.* the first letter of the name (here: s), *2.* the other letters of the name (here: a, n, d, and r), and *3.* non-name letters (here: m, o, and f). Testing the difference between ambiguous and random use we took the

average scores for name letters other than the first letter and the average scores for non-name letters.

For a selection of five children two independent coders (both authors) agreed substantially on the number of words that included the first letter of the name, other letters of the name and non-name letters; agreements for first letter, other name letters and non-name letters were $r = .83$, $r = .87$, and $r = .89$, respectively.

Results

Level of writing

We discerned children not yet writing phonetically from those who had just started to produce some phonetic spelling and tested ambiguous versus random use of letters for both levels separately. *Level 1*, the lowest level ($N = 17$), mainly made random letter strings rarely selecting correct letters (they wrote at most one correct letter in two out of 16 dictated words). *Level 2* ($N = 18$), by contrast, chose one (17 children) or more correct letters (1 child) in three or more words. On average children of level 2 wrote 3.4 ($SD = 1.9$) words with 1 or more correct letters whereas children of level 1 wrote .4 ($SD = .7$) words including 1 correct letter. Apart from very few exceptions even level 2 children did not produce readable invented spellings. Level 2 children were more advanced in name writing than those at level 1. At level two 65% wrote almost all letters of their name correctly, whereas about three-quarters of level 1 children (76%) wrote only one or two letters correctly. Children at both levels were on average 4 years and 6 months old.

Proportion of name letters in dictated words

Writing dictated words children used a small number of different letters. We tallied name letters and letters not from the name (letters more than once appearing in *one* word were tallied one time). About half of the letters was derived from children's name: at level one 58% ($SD = 18$) and at level two 46% ($SD = 22$). In so far they used letters not from the name there was not much variety; at level 1 they used 20% ($SD = 11$) of alphabet letters not in their name, at level two 33% ($SD = 11$). Simple forms like 'o' and 'i' were the most frequently used non-name letters. Children scoring at level 2 wrote 'o' or 'i' in about half of the 16 words (in 44% and 47%, respectively) children at level 1 used 'o' in one quarter (26%) and 'i' in 12% of all words.

Did all letters from the name occur to the same extent in dictated words or did the first letter predominate? We tallied the number of words that included the first letter of children's name; for each other letter of children's names we tallied the number of words that included that specific letter and averaged the number of words written with one of the other letters from children's names. Next we tested whether the percentage of words written with the first letter of children's name exceeded the percentage of words that included other letters from the name. According to a significant matched-pair Wilcoxon test, *level 1* children produced more words that included the first letter of their name ($M = 39\%$, $SD = 30$) than words with other letters from the name ($M = 22\%$, $SD = 22$), $Z = -1.97$, $p<.05$,

$N = 17$. By contrast, children at a higher level of writing (*level 2*) did not prefer the first letter from their name to other letters from their name. About as many words included first letters ($M = 39\%$, $SD = 37$) as other letters from the name ($M = 52\%$, $SD = 30$). According to a matched-pair Wilcoxon test the difference was not statistically significant.

Ambiguous and random letters from the name

Are children who selected quite a few correct letters using the letters from their name and other letters by chance or because they recognize sounds of these letters in dictated words? Children scoring at *level 2* wrote the first letter of the name more often ambiguously ($M = 55\%$, $SD = 40$) than randomly ($M = 38\%$, $SD = 37$); see Table 1. According to a matched-pair Wilcoxon test the difference between ambiguous use of first letters of the name and random use of first letters was statistically significant, $Z = -2.16$, $p < .03$, $N = 17$ (two-tailed). In other words, it is not merely chance that children use the first letter of their name phonetically. However, they wrote other letters from the name as often randomly as ambiguously, 34% ($SD = 21$) versus 36% ($SD = 19$), suggesting that they recognize the sound of the first letter of the name in the dictated words but not the sounds of other letters from their name. By way of contrast, the difference between random and ambiguous first letters of the name was not statistically significant at *level 1*. These children used the first letter of their name as often randomly as ambiguously (see Table 1), which indicates that at this writing level correctly selected letters from the name were chance hits and not chosen by the child because he or she had recognized the sound in the spoken word (cf. Treiman et al., 2001). They also wrote the other letters from their proper name as often randomly as ambiguously; 18% ($SD = 16$) versus 18% ($SD = 18$).

Table 1. *Proportion (SD) of ambiguous versus random written name letters and non-name letters used to represent 16 words by writing level (level 1 = score 7.5-8.5 on the writing scale; level 2 = score 8.6-9.5 on the writing scale)*

		% First Letter of Name			% Other Letters of Name		% Non-Name Letters	
Group	N[a]	Ambiguous[b]	Random	N	Ambiguous	Random	Ambiguous	Random
Writing level 1	15	34.5 (33.2)	38.7 (33.8)	17	17.6 (17.9)	17.9 (16.1)	3.4 (4.1)	7.7 (5.6)
Writing level 2	17	55.4* (39.9)	37.5 (37.3)	18	35.8 (18.3)	34.8 (19.3)	20.3 (15.8)	15.5 (8.9)

[a] Because of the limited set of letters appearing in the 16 dictated words not all children could be included. [b]Letters match sounds in words but children may have chosen the letters by chance.
* $p < .05$.

Ambiguous and random letters, not from the name

Is the finding that the first letter of the name is more often used ambiguously than randomly unique for the first letter or can it be replicated with non-name letters?

The present results support the hypothesis that phonetic writing starts with the first letter of the child's own name. Children scoring at writing *level 2* wrote on average in 88% ($SD = 18$) of the dictated words one or more non-name letters, but these letters were as often used randomly ($M = 16\%$, $SD = 9$) as ambiguously ($M = 20\%$, $SD = 17$); see Table 1. Children scoring at *level 1* wrote less non-name letters ($M = 53\%$, $SD = 30$) but here as well the difference between ambiguous ($M = 5\%$, $SD = 6$) and random letters ($M = 8\%$, $SD = 6$) was not statistically significant.

Discussion

Symbolic writing starts with letters from one's own name. When children make letter strings they often select letters from their proper name ($M = 52\%$, $SD = 21$) probably because they are most familiar with their forms or because they are aware that these letters are symbols for a referent. Children producing random letter strings more often use the first letter of the name (in 37% of all dictated words) than other letters from the name (for all name letters on average in 22% of all dictated words) or non-name letters (for all alphabet letters on average in 6% of all dictated words). Our results also lend plausibility to the idea that phonetic writing begins with the first letter of the name probably because children are more familiar with the sound of this letter than with the sound of any other letter. They succeed to recognize the sound of the first letter of the name in unpracticed words preceding any other letter. When children start to write phonetically (the level 2 children in this study) the percentage of ambiguous use of first letters from the name exceeds the percentage of random use. Hence the ambiguous first letters are not chance hits but indicate that children often select the first letter of the name because it represents a sound in the word. These children also select one of the other name letters to represent dictated words (in 50% of the dictated words) but for those letters ambiguous and random use does not differ. Apparently, the other name letters are known as written symbols but children do not know how they sound in words and use them purely randomly. The same is true for non-name letters. Children often write 'o' and 'ĭ' but it is not plausible that they select these letters because they recognize the sound in spoken words. An objection to this conclusion may be that phonetic use of some frequently appearing letters was obscured because scores for letters from the name and for non-name letters were averaged. Thus we cannot rule out that one or two letters other than the first letter of the name were used phonetically as well. To test this hypothesis we selected per child the letter that most frequently appeared in the 16 words. It could be a non-name letter or a name letter apart from the first letter of the name. Post hoc testing revealed that the thus selected letter was as often ambiguous as random; the difference between phonetic and random use was not statistically significant.

In other words, these findings suggest that phonetic writing starts with the first letter from the name whatever it is. Ahead of all other letters, children are able to recognize the sound of this letter in dictated words and to correctly represent this letter in the spellings that they make up to represent referents. It is not plausible that children select the first letters of the name because they are

easy letters. Inspecting the set of first letters it is striking that this set includes most letters of the alphabet (18 out of 26) and not just "easy forms" like O and I or acrophonic letters like P or T where letter names facilitate acquisition of letter sounds (Foulin, 2005). It makes sense that the first letter of the name was used phonetically preceding other name letters when we consider that the first letter of the name is practiced more than any other letter not only as a written form but also as a form that relates to a name or sound. Note that grown-ups often say: "that's your letter, the 't' from Twirre." In other words, we hypothesize that children start using letters phonetically not until they are instructed in how these letters sound in words. Is instruction over time limited to the first letter of the name? It is imaginable that instruction first expands to other letters from the name. When supporting their children as they try to write unpracticed words mothers may use other letters from the name as cues: 'It's r like in Peterrr' (Aram & Levin, 2001). Alternatively, children with an emerging understanding of the alphabetic-phonetic principle (they are able to recognize the first letter of the name in spoken words) may ask grown-ups how to represent other phonemes while trying to write unpracticed words thus expanding their letter knowledge beyond letters from their own name. While writing unpracticed words they may wonder how to represent other unknown sounds. Children may thus elicit instruction in non-name letters and sounds. In the present study children who were just starting phonetic writing, wrote other letters from their name twice as often as non-name letters, but phonetic writing of these other name letters was a chance hit. We wondered if somewhat more advanced children first expand phonetic writing to other letters from their name. Do they use the other letters from their name phonetically and more often than non-name letters?

6 ARE NAME LETTERS APART FROM THE FIRST ONE AMONG THE FIRST LETTERS TO BE USED PHONETICALLY? [1,2]

Abstract

The aim of this study was to replicate the effects of name writing reported in Chapter 5 with another sample of older children from low socioeconomic status families (N = 79). The first letter of the name was also the first one to be written phonetically. More advanced writers understood the principle of alphabetic-phonetic writing and phonetic writing was not restricted to name letters.

[1] If quoting the research in this chapter, please refer to: Both–de Vries, A. C. & Bus, A. G. (2006). *Name Writing: A First Step to Phonetic Writing? Does the name have a special role in understanding the symbolic function of writing.* Manuscript submitted for publication.

[2] Our thanks to Maria de Jong for generous providing the data of her study.

Introduction

In the present study we tested: *1.* Whether older and more advanced children than those in Study 5 (Chapter 6) generalize phonemic writing first to other letters from their name or directly to other non-name letters; and *2.* Whether in a group of children from low socioeconomic status (SES) families we can replicate that phonemic writing starts with the first letter of the name.

Method

Procedure and task

The data in Chapter 6 were collected for another purpose (de Jong & Bus, 2002). Similar to the first study, children wrote their name and nine other words on a sheet of blank paper. Children were tested individually in a quiet corner or separate room in kindergarten. Each child was asked to write his/her name and then several dictated words were presented one at a time. The instructions were straightforward: "Write your name" and "Write X" (i.e. 'vis' [fish]). The assessment was completed in one session.

Participants

Similar to Study 5 we selected children who used conventional symbols (letters or numbers) to represent their name and other words. Thus 79 Dutch children 4- to 6-year-old (M = 5; 8, range 4; 3 – 6; 5) were selected from the complete sample of 88 children. The children were selected from three kindergarten classrooms in the same school in a small town in the Netherlands. Overall the children came from families with low educated parents. Like most Dutch kindergarten classrooms, letters or other knowledge basic for reading and writing were not part of the school curriculum.

Stimuli

In addition to their own name children wrote 9 dictated words: *kaas* [cheese], *zak*, [sac], *wip* [seesaw], *pop* [doll], *vis* [fish], *zon* [sun], *papa* [daddy], *mama* [mommy], and *flippo* [pog]. *Papa* and *mama* were excluded from most analyses, because we noticed that many children knew those words as a logogram similar to their proper name. On average 23% (N = 18) of the group wrote *papa* and/or *mama* conventionally, whereas only 13% (N = 10) wrote one or more of the other words conventionally.

Coding

For the name and each of 9 dictated words we coded the number of words in which children had used conventional symbols and the number of words in which one or more letters were correct. Agreement between two coders on one or more conventional symbols, one correct symbol, and two or more correct symbols was .99, .93, and .92, respectively.

Per child and per conventional letter we examined: *1.* whether the letter was a (first) letter from the name or a letter not from the name; and *2.* whether the letters were used randomly or ambiguously. This resulted in two scores per letter:

random and ambiguous. See Chapter 5 for an illustration of coding. For a sample of children ($N = 10$) the agreement for use of name and other letters in dictated words between two coders (both authors) ranged from $r = .72$ (for 'ambiguous use of other name letters') to $r = .96$ (for 'ambiguous use of first letter from the name') (mean $r = .87$, $SD = .09$).

Results

Level of writing

In this study we distinguished three levels of writing. Children at *level 1* ($N = 26$) made random letter strings rarely selecting correct letters (at most one letter in one or two of the dictated words) similar to level 1 children in Chapter 5; children at *level 2* ($N = 37$) wrote one letter correctly in three or more words similar to level 2 children in Chapter 5; children at *level 3* ($N = 16$) (not represented in Chapter 5) chose 2 or more correct letters to represent words resulting in a substantial number somewhat readable invented spellings ($M = 4.4$ words, $SD = 2.3$). They wrote for instance 'ks' instead of 'kaas' [cheese] or 'vs' instead of 'vis' [fish]. Quality of name writing differed among the three writing levels; according to a Kruskal Wallis test this difference was statistically significant, χ^2 (2, N = 79) = 9.65, $p < .008$. According to a Fisher Z test, children scoring at level 2 were more advanced than level 1 children , χ^2 (1, $N = 63$) = 26.18, $p < .001$. Children at level 2 wrote almost all letters of their name correctly (correct: 87%), whereas almost half of the level 1 children wrote only one or two letters of their name correctly (correct 54%). All children at level 3 wrote their name correctly. They outperformed children at level 2, χ^2 (1, $N = 53$) = 13.90, $p < .001$.

Proportion of name letters in dictated words

Writing dictated words children at writing level 1 and 2 used a small number of different letters. They mainly used letters from their name, of all letters 65% ($SD = 23$) and 53% ($SD = 22$) respectively were name letters. In the group scoring at the highest writing level (level 3) name letters were less dominant; 32% ($SD = 16$) of all letters were name letters. According to a one-way ANOVA, writing level caused a significant effect, F (2, 76) = 11.6, $p < .001$. According to post hoc testing (Bonferroni), level 1 and 2 did not differ but level 3 differed from level 1 and from level 2 (p's < .01). In so far children of the two lower levels used letters not from the name there was not much variety; at level 1 they used 15% ($SD = 7$) of alphabet letters not in their name and at level two 24% ($SD = 10$).

Did all letters from the name appear in dictated words or mainly the first letter? We counted the number of words written with the first letter of children's names and calculated the number of words including other letters of children's names (see for procedure, Chapter 5). We tested, for each level separately, whether the percentage of words written with the first letter of children's names exceeded the percentage of words that included one of the other letters from the name. Children at the lowest writing level (level 1) used the first letters of their name ($M = 48\%$, $SD = 40$) more frequently than other letters from the name ($M = 39\%$, SD = 25), but this difference was not statistically significant.

Children at level 2 and level 3 used the other letters of their name as often as the first letter of their name. At level 2 and 3 first letters of the name appeared in 41% (SD = 34) and 13% (SD = 18) of the dictated words and other name letters in 48% (SD = 22) and 26% (SD = 15) respectively.

Ambiguous and random letters from the name

At all writing levels about half of the children could not be included in testing effects of first letters of the name on writing dictated words because about half of the letters of the alphabet did not appear in those words. Children from level 1 (the ones who mainly produced random letter strings; N = 12) wrote the first letter of their name as often randomly (M = 25%, SD = 28) as ambiguously (M = 14%, SD = 30); see Table 2. The difference between the number of ambiguous and random first letters was not statistically significant. So correct first letters were chance hits at this level. Outcomes were similar for other letters from the name. Children scoring at writing level 2, by contrast, wrote the first letter of their name more often ambiguously (M = 59%, SD = 44) than randomly (M = 47%, SD = 36). According to a matched-pair Wilcoxon test, the difference between ambiguous and random first letters of the name was statistically significant, Z = -2.08; p < .02, N = 22 (one-tailed). By contrast, they wrote other letters from the name as often randomly as ambiguously; scores were M = 44% (SD = 32) versus M = 38% (SD = 21), respectively. Results were the same when, instead of the pooled set of other name letters, we chose a letter from the name apart from the first letter that most frequently appeared in the dictated words. This frequently written letter was used as often ambiguously as randomly. Did the children at level 3 (more than one correct letter per word) write letters from the name ambiguously or randomly? According to matched-pair Wilcoxon tests, the differences between ambiguous writing (M = 61%, SD = 45) versus random writing (M = 8%, SD = 10) of the first letter from the name and the difference between ambiguous writing (M = 61%, SD = 40) versus random writing (M = 9%, SD = 13) of other name letters were statistically significant, Z's < -2.36; p's < .01, N > 7 (two-tailed). In other words, at level 3 ambiguous name letters were no chance hits.

Ambiguous and random letters, not from the name

Children at level 1 wrote one or more non-name letters in about half of the dictated words (M = 5, SD = 3). The difference between ambiguously written (M = 6%, SD = 5) and randomly written non-name letters (M = 4%, SD = 5) was not statistically significant. Children at level 2 wrote non-name letters in most of the dictated words (M = 7, SD = 2). Children at this level wrote some non-name letters ambiguously but they did so as often randomly (M = 15%, SD = 9) as ambiguously (M = 16%, SD = 9); see Table 2. Results were the same when, instead of the pooled set of non name letters, we chose a letter not from the name that most frequently appeared in the dictated words. This frequently appearing letter was used as often ambiguously as randomly. Did more advanced writers (writing level 3) use non-name letters as often ambiguously and randomly, which would indicate that phonetic writing first expands to other letters from the name?

Table 1. *Proportion (SD) of ambiguous versus random name letters and non-name letters used in 7 words by writing level (level 1 = score 7.5-8.5 on the writing scale; level 2 = score 8.6-9.5 on the writing scale; level 3 = score 9.6 or higher on the writing scale)*

		% First letter of Name			% Other letters of Name			% Non-name letters			% Most frequent other letter of Name			% Most frequent non-name letter	
Group	*N*[a]	Ambi-guous[b]	Random	*N*	Ambi-guous	Random	*N*	Ambi-guous	Random	*N*[a]	Ambi-guous	Random	*N*[a]	Ambi-guous	Random
Writing level 1	12	13.8 (30.0)	24.5 (27.9)	26	25.8 (31.1)	36.0* (26.0)	26	5.5 (5.0)	6.2 (4.9)	16	43.7 (46.7)	66.3* (30.8)	13	46.2 (34.2)	45.6 (32.2)
Writing level 2	22	58.8* (43.7)	47.0 (35.5)	37	44.0 (31.5)	37.5 (21.3)	37	16.3 (9.3)	14.7 (9.3)	27	59.6 (46.4)	75.3 (21.2)	32	64.4 (32.5)	68.0 (28.5)
Writing level 3	7	60.7* (45.3)	8.1 (10.2)	16	60.8* (40.1)	9.0 (13.1)	16	54.8* (21.3)	5.3 (6.7)	11	94.0* (13.4)	10.6 (18.9)	16	94.8* (18.6)	19.3 (28.3)

[a]Because of the limited set of letters appearing in the 7 dictated words 38 of 79 children could not be included in analyses of use of first letter of the name, 25 of the 79 children not in analyses of the most frequent used letter of the name and 18 of the 79 children not in the analyses of the most frequent used not-name letter.
[b]Letters correspond to the sound in words but this correspondence is possibly by chance.
* $p < .05$.

This hypothesis was not supported. Level 3 children wrote non-name letters (appearing in nearly all of the words, $M = 92\%$, $SD = 9$) more often ambiguously ($M = 55\%$, $SD = 21$) than randomly ($M = 5\%$, $SD = 7$). According to matched-pair Wilcoxon test, this difference was statistically significant, $Z = -3.52$, $p < .001$, $N = 16$ (two-tailed).

Did children use letters from words such as mama (mommy) and papa (daddy) more frequently ambiguously than randomly?
Many children knew *papa* and *mama* as logograms: on average 23% of the children wrote '*papa*' and/or '*mama*' conventionally (10% 'papa' as well as 'mama'), whereas only 13% of the children wrote one or more other words conventionally. As children have learned to write these words they may use the first letter of these words more often ambiguously than randomly when they try to spell new words. At level 1 and 2 four children wrote *papa* conventionally. One child's name started with 'p' and was therefore excluded from further analyses. The remaining 3 children indeed tended to write the letter 'p' more often ambiguously ($M = 33\%$, $SD = 34$) than randomly ($M = 8\%$, $SD = 14$) similar to the first letter of their proper name. According to a matched-pair Wilcoxon test the difference between writing the first letter of *papa* ambiguously and randomly tended to be statistically significant, $Z = -1.34$, $p < .09$, $N = 3$ (one-sided). The 'p' from *papa* appeared more frequently ambiguously in their writing ($M = 33\%$, $SD = 34$) than any other non-name letter ($M = 12\%$, $SD = 7$), but this difference was not statistically significant. Unfortunately we were unable to test the same for the letter '*m*' in mama because this letter did not appear in the rest of the dictated words. However the finding that at level 1 the letter 'm' was the most frequently written non-name letter suggests that right from the very start of symbolic writing 'm' from 'mama' is a well-known symbol.

Discussion
In another sample including older children from low SES families, we could replicate that invented spelling begins with the first letter of familiar names. The first letter of the name was the letter most often used correctly when children just started to write some correct letters to represent referents; the percentage of ambiguously written first letters exceeds that of randomly written first letters indicating that the correctly used first letters are no chance hits. Other letters from their own name often appear in their writing (in about half of the words) but apparently not because of the match with sounds in the word. Children are also eager to learn to write other important words such as 'mama' and 'papa' as appears from the relatively high number of children in this study that correctly spelled these words. The findings offer some support for the hypothesis that first letters of these words may also be among the first to be written phonetically. The letter 'm' was the most frequently written letter and, in so far children were able to write 'papa', they used 'p' phonetically in unpracticed words.

The results of this second study are unique because we were able to reconstruct how invented spelling develops after children have begun to represent the first

letter of the name correctly in unpracticed words. Different from Chapter 5, the data of the present study enabled us to test whether somewhat more advanced children (the ones who represent one or two letters correctly in most words) use other letters from the name correctly preceding non-name letters. Surprisingly we found that in this more advanced group phonetic writing was not limited to the letters of the name. Children at this level used all letters from their proper name more often ambiguously than randomly but also letters not from the name. In other words, only at the very start is invented spelling restricted to the first letter from the name. The alphabetic principle is transferred to a variety of letters after children have discovered by means of the first letter of the name that letters relate to sounds in spoken words. We can imagine that after children are proficient in writing their own name, they ask for support in writing other names and referents. In response to that, grown-ups expand instruction to other letters; they demonstrate how letters other than those from the child's name are formed and sound in words thus stimulating that children also use other letters in their invented spellings.

A limitation of the present study is that about half of the letters of the alphabet did not appear in the dictated words. Nearly half of all available children could therefore not be included in testing effects of first letters of the name on writing unpracticed words. On the other hand, it should be noted that, despite of this restriction, the data enabled us to test the main hypothesis (phonetic writing starts with the first letter of the proper name) for a variety of letters. The set of first letters included about half of the letters in the alphabet (12 letters) and, more important, not only "easy" letters but also so-called non-acrophonic letters ($N = 4$) such as L or R (Foulin, 2005). In future studies it might be worthwhile to select per child a set of words with the first letter appearing in half of the words.

7 GENERAL DISCUSSION EARLY WRITING: FROM IMITATING PRINT TO PHONETIC WRITING

In the literature on emergent writing it is assumed that children begin to construct ideas about writing long before they start school. (Sulzby, 1986; Temple, Nathan Temple, & Burris, 1993). Which ideas develop apart from knowledge about the written form? In four studies we focused on the question whether preschoolers discover that writing symbolizes referents and how development goes from written-like to symbolic and phonetic writing.

From a young age children develop knowledge of the form features of writing but the youngest participants (3½-4) revert to drawing to denote meaning. Somewhat older children (4-4½) are less inclined to revert to drawing but under some conditions they do. When the referential function of writing is strongly emphasized writing creates a dilemma for these children: to represent the two-dimensional object print or to represent the referent's meaning. They often solve this dilemma by reverting to drawing. Apparently writing is not yet an alternative notational device to these children. Older children (4½-5) stop reverting to drawing. They stick to the written form even when the referential function is emphasized, which suggests that to them writing has become a communicative device although most of them do not succeed in writing readably. In contrast, older children continue to use iconic devices to represent number and color in their writings. We hypothesize that on the verge of integrating new cognitive knowledge children use multiple strategies (Kamberelis, 1994); they mix up iconic symbolizations as number and color with linguistic symbolization, i.e. phonetic writing.

Children are more advanced in writing their names than in writing new unpracticed words, and they progress more rapidly on name writing. As early as preschool, children often spell their name wholly or partially in conventional form, prior to comprehending the alphabetic-phonetic principle. When children have learned to write their name they begin to use the letters from their name in the spelling of unknown dictated words probably because they know these forms best or because they have experienced that those letters symbolize meaning. Conventional symbols in their writings are to a large extent (52%) letters from their proper name. Especially children writing random letter strings (level 1 in the studies 4 and 5) mainly selected letters from their proper name (58% in Study 4 and 65% in Study 5). The production of phonetic spelling starts with the first letter of their proper name. Four-year-olds from high-educated families and five-year-olds from low-educated families start phonetic writing with the first letter of their name. Other letters (from the name or not from the name) also appear in

children's writings but randomly. In a group of more advanced children (those who produce some invented spelling) phonetic writing is not any longer limited to first letters of the name or any other letters from the name.

When Dutch children have just started to choose some correct letters in the spellings of dictated words they mainly succeed with the first letter of their own name. It looks like the first letter of the name, whichever it is, is the one and only letter that is written phonetically at the very start of phonetic writing. A plausible explanation is that phonemic awareness results from the instruction elicited by the first letter. Grown-ups may say: "that's 'p' for Peter." Children thus practice that a letter refers to a sound in a spoken word. As a result, phonemic awareness starts with the first letter of the name and young children are successful in recognizing the sound of this letter in spoken words preceding other sounds. The proper name thus supplies young children with a model through which they can analyze and represent spoken language (Olson, 1996). This explanation fits with the finding that in intervention programmes letters draw the children's attention to the sounds in spoken words (cf. Bus & Van IJzendoorn, 1999; Byrne, 1998). An alternative hypothesis would be that from the very beginning phonemic awareness is not restricted to particular phonemes but that children are first able to show understanding of the alphabetic principle with the first letter from the name that they best know as a letter (cf. Vernon & Ferreiro, 1999). Whatever the best interpretation of the present results, this study is the first one that demonstrates the effects of familiarity with the name and letters from the name on children's emerging writing skills.

The present results are in line with Tomasello's developmental theory (1999) that after a stage of imitating behaviour (here: copying the written form of their name and words like mama and papa) children develop a meta-cognitive understanding of their behaviour probably as a result of grown-ups' responses to successful imitations of the name ("it says Taco"). By sounding out letters ("t of Taco") grown-ups initiate children's reflection on imitative writing and pave the way to a higher level of understanding how the written form represents a referent. They focus children's attention on letter units and how they sound in spoken words thus promoting alphabetic-phonetic writing that goes beyond imitation of the form. In line with the instruction hypothesis (c.f. McGee & Purcell Gates, 1997) children in Study 5 from lower SES families do not start to represent some letters correctly until they are 5½ probably because they do not practice their proper name until they have been in school for some time. By contrast, children in 4 from higher educated families begin to write some correct letters without much school experience (4½ year old), probably because writing the proper name and other names like mama and papa and interactions surrounding name writing are an issue at home from an early age conducted by family members as routine arrangements (Gillanders & Jimenez, 2004). It seems a plausible hypothesis that instruction by grown-ups is elicited by children's more or less successful attempts to imitate writing of their proper name. In other words, name writing thus functions as the pacemaker for phonemic awareness or the alphabetic strategy (Frith, 1985).

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8 EXPLORING EVERYDAY PRACTICES: EARLY WRITING ACTIVITIES IN DUTCH FAMILIES AND SCHOOLS

The results of our studies into effects of learning to write one's name (chapters four, five and six) presume that writing one's own name initiates informal instruction and thus contributes to children's reading development (see also Dunsmuir & Blatchford, 2004; Shatil, Share, & Levin, 2000; Strickland & Shanahan, 2004; Welsch, Sullivan, & Justice, 2003). In a Canadian study it appeared that children learn to read in first grade with less difficulty when their parents read to them and engage their children in activities such as writing their name (Sénéchal & LeFevre, 2002). Weigel, Martin and Bennett (2005) reported that preschoolers' active engagement in literacy and language activities is associated with their print knowledge. Canadian upper- and middle-class parents mention the writing of their own name as their children's most frequent literate activity (Levy, Gong, Hessels, Evans, & Jared, 2006). From a questionnaire, Evans and colleagues (Evans, Fox, Cremaso, & McKinnon, 2004) concluded that only 43% of parents felt that the school had prime responsibility for literacy development among 6- to 8-year-old children. The authors concluded that the majority of these parents actively coach their children to read and write. Interviews as part of the Baltimore Early Childhood Project (....."How do you feel about the responsibility of the school and the home for children's learning to read and to write") showed that only 31% of parents and 27% of teachers believed that the school was primarily responsible for children's reading development; many parents (53%) and most teachers (73%) stressed that both home and school played a role in learning to read (Serpell, Baker, & Sonnenschein, 2005). Is this also true for the Netherlands? Do Dutch children have as much experience with reading and writing at home as Canadian children? Do parents notice children's reading and writing attempts and do they respond to those? Or do parents chiefly rely on school when it comes to reading and writing? In this concluding chapter we describe research into activities that may stimulate writing for young children. We pay in particular attention to *1.* how Dutch parents perceive their role in teaching reading and writing, *2.* writing activities of Dutch children at home and in school, and *3.* variety across cultures. Does the Netherlands differ from other western countries like the United States and Canada (Harkness & Super, 1993)?

Learning to write at home

Assuming that cultural practices are motivated and sustained by parental belief systems (Harkness & Super, 1993), parents of first and second grade children

were asked about how responsible they felt for their young children's literacy (Van der Kooij, unpublished report). The educational level of the 125[1] parents varied from low educated (at most Vocational Training for 12-16 year-olds (VMBO), $N = 30$) through somewhat higher vocational education (MBO, $N = 50$) to college or university level ($N = 43$). The parents were asked to indicate developmental areas that they considered as their main responsibility. Similar to the procedure followed by Evans and colleagues (Evans et al., 2004) parents were asked to make a choice from nine areas: literacy, numeracy, language development, moral education, creativity, physical education, general education, health and hygiene, and computer skills. Selecting three out of nine areas, Dutch parents seldom (6%) chose literacy. This outcome meant that they scored significantly at below chance level and indicates that Dutch parents believe that becoming literate mainly is the school's responsibility. When asked to indicate areas that are the school's main responsibility, literacy was selected by most parents (88%). Do parents, in spite of this, initiate activities that are related to early literacy such as name writing? The parents in Van der Kooy's study reported that preschoolers do not write their name, but kindergarten children do so frequently, and children in first grade very often write their name. Age was statistically significant, χ^2 (2, $N = 102$) = 169.4, $p < .001$. The higher the educational level of the parents, the more they are inclined to engage preschoolers and kindergarten children in reading and writing activities. Low-educated parents denied that their children make attempts to write their name in preschool age and they rarely observed kindergarten children write their name. By contrast, higher-educated parents reported some name writing in preschool age and regular attempts beyond five. Parents' levels of education caused a statistically significant effect, χ^2's (2, $N = 104$) = 5.77, p's < .05. By the time children begin first grade and receive instruction in reading and writing, this difference vanishes: all parents report that first grade children frequently write their name at home.

Schools in the Netherlands do not encourage parents to support writing activities of young children. We used a Dutch adaption of an American questionnaire (Baumann, 2000) to compare Dutch teachers' ideas with those of teachers in the United States (Both & Bus, 2004). A substantial proportion (38%) of the 102 Dutch preschool- to second-grade teachers did not encourage parents to initiate writing activities. Neither did they choose one of the three options presented in the questionnaire ("I send letters home explaining language/reading instruction and providing tips how parents can help," "I regularly give students books to take home and read with their parents," and "I invite parents to special meetings at which we explain how they can contribute to their child's literacy"), nor did they come up with any other similar initiative. Teachers informed parents about how they can stimulate their children's literacy principally through a parent-teacher evening (33%). In so far Dutch teachers advised parents they urged them to read aloud to them (99%) or encouraged parents to let their children read to them (64%); only 24% encouraged parents to write with their children at home ("I encourage parents to have their children write something that matters.").

[1] Two parents' education level was missing.

Writing in pre-school and kindergarten

From observations in nine kindergarten groups Bus and Both (1997) concluded that kindergarten children were indeed stimulated to write, but that teachers mainly highlighted form features of writing and not the function of writing or letter-sound relationships. During observations lasting five hours per class spread over three mornings, they noted only incidental interactions that prompted children to think about alphabetic-phonetic writing or the spelling of words. Teachers emphasized the visual aspects of writing and gave feedback when letters were written in reverse or upside down. Baumann's questionnaire (Baumann et al., 2000) revealed similar outcomes (Both & Bus, 2004). Compared to American children, Dutch preschoolers and kindergarten children relatively rarely receive instruction in the alphabet and letter-sound relationships. The results show a statistically significant difference in the time spent on the reading instruction of children (e.g., reading out loud, reading in groups, practising writing, and learning letters), using and practising reading (e.g., choosing one's own book to read and seeking information in books), and other activities such as verbal games, writing stories, and inventing spelling. U.S. teachers spend almost twice as much time giving reading instruction compared with Dutch teachers; 140 versus 80 minutes per day, respectively. It may be that these results are somewhat exaggerated as Dutch teachers may have a narrower definition of reading instruction than American teachers; for instance, Dutch teachers may not consider the time that is spent on reading to the class or talking about authors of children's books as reading instruction per se. Yet the conclusion that few Dutch preschool or kindergarten teachers teach how to read and spell still stands. For example, only 27% of pre-school and kindergarten teachers taught letter-sound combinations during writing activities ("phonic skills are presented and taught through children's writing."). However variations between classes were substantial. For instance, some classes revealed many examples of functional writing activities.

Some examples of activities that stimulate functional writing and reflection on the alphabet.

Bus and Both (1997) concluded that the most important stimuli for pre-schoolers and kindergarteners to write and think about content were play centers equipped with plenty of familiar literacy-related objects (e.g., paper, pencils, postcards, diary, calendar) and being given tasks such as writing a book. For instance, Alison, a pre-schooler, sitting in a well-equipped play center, said "I'm going to write," and took a sheet of paper and began writing capital letters and the number 5. Another pre-schooler, Dominique, given the task of writing a book, made a catalog so that "people can see how much things cost." These writing activities stimulate the imitation of writing as well as reflection on purposes of writing, but they may not promote knowledge about writing as an alphabetic-phonetic system as children rarely appear to produce invented spelling in such settings (Neuman & Roskos, 1997). We rarely came across activities that stimulate reflection on the relationship between letters and sounds. "What Can You Show Us," an American

project meant to elicit students' demonstration of their knowledge about a large-print text displayed on a chart or in a Big Book, often revealed print-oriented responses besides meaning-oriented responses (Richgels, Poremba, & McGee, 1996). The advantage of the former responses provoked by inviting volunteers to step before the class and show something they know about the text, is that they offer ample opportunity for teachers to teach phonemic awareness (see Figure 1). A practical study carried out by a teacher in a Dutch kindergarten classroom with mainly at-risk children, confirmed that "What Can You Show Us" can generate a large number of references to letters from the child's name (personal communication Elly de Jong, 9 November 1999). An eight-minute video (produced by Malmberg, BOA Productions, 1999) demonstrates that during a single group session Ikram recognized the word 'ik' ['I'] using the letters from her own name, Bilal recognized the letter 'b' from her name in words like 'bibberig' [trembling] and 'bang' [scared], Joao found all the 'I's, Navita heard that the letter 'b' made the same sound in 'bang' and 'bibberig', Jeffrey turned 'muis' [mouse] into 'vis' [fish] by hiding the 'm', Miriam pointed out the 'm' from her name whereupon other children reacted by pointing out that Mehmet and McDonald's also begin with 'm', and the youngest pre-schooler indicated three other 'm's in the text. Note that in this session almost all letters that the children recognized were related to the first letter of their own name.

Figure 1. A 10-minute, whole class lesson in Mrs. Poremba's kindergarten (Richgels, Poremba, and McGee (1996).

Dear kindergarteners, It is fall! Fall is apple time We picked up an apple On a tree. Yum! Yum! Love, Uncle Wally	Mrs. P: Would somebody like to tell us about the letter? Eric: Two apples in one tree. Mrs. P: You noticed two apples in one tree. You want to come up and show us that, Eric? Eric: And love. Mrs. P: Come on up and show those important parts. Mrs. P: And you said you noticed something else, Eric. Eric: (pointing) Love Mrs. P: You noticed love also. Thank you Eric. Mrs. P: Nathan, would you like to come up and show us something you need us to see? Nathan: (pointed to the K in Kindergartners and the K in KP written in the corner of his name collar to identify him as a member of Mrs. P.'s kindergarten. Mrs. P: Okay, turn around and show us what's on your collar. Okay, what did you notice, Nathan? Nathan: That's right here and that's right there. Mrs. P: What do you think that is Nathan? Do you know what that is? Children: *K* Nathan: *K* Mrs. P: a *K* Child: *KP* Mrs. P: And you noticed— Nathan: a *K* up there Mrs. P: a K up there in the first part, the very first letter in that big, long word. Thank you, Nathan. (Several more demonstrations followed....)

Note. Left the shared letter, right the discussion between Mrs. Poremba and her students.

Educational innovation: some trends

Children with low scores on emergent literacy skills run a greater risk of reading problems (Bus, 2005). Struggling beginning readers do not catch up when emergent literacy lags behind (Spira, Bracken, & Fischel, 2005). As a consequence of such findings educators tend to pay more attention to emergent literacy from an early age. What kind of literate activities emerged in Dutch schools from the insight that emergent literacy predicts later literacy? There is, for instance, a trend towards stimulating developmentally appropriate instruction for pre-schoolers and kindergarteners *(Ontwikkelings Gericht Onderwijs [Developmentally-focused education])* in the domain of literacy (Janssen–Vos, Pompert, & Vink, 1991). Pre-schoolers are stimulated to explore reading and writing in the context of dramatizing. Children play, for example, 'garage' elicited by posters of various auto brands, an appointment book, advertisement, and paper to write invoices (Janssen–Vos & Pompert, 2001). Kindergarten children engage in functional writing activities such as making books (see Janssen-Vos, Pompert & Vink, 1991). Analyzing the manuals for instruction we were unable to find examples that describe how teachers can challenge their students to reflect on the process of writing. A basic assumption seems to be that children will spontaneously ask for help: "Is this correct?" or "What does this say?" The Expertise Center – a center aimed at educational innovation of reading and writing instruction - designed prototypes of lessons to stimulate writing and phoneme awareness activities in kindergarten classes (van Kleef & Tomesen, 2002[a], 2002[b]). They suggest that teachers develop daily routines that include talking about letters and how they sound in words. For example, a teacher helps a student to write the word 'jaar' [year] by asking "whose name in the class begins with the letter 'j'?" (Van Kleef & Tomesen, 2002 [a], p. 224). The 'ABC wall' is introduced to link sounds to their written form. On the wall are posters for each letter of the alphabet including drawings and/or words of referents that start with a particular letter (or sound). One suggestion is to add the names of the children in the class.

Cultural diversity

Parental beliefs about literacy differ and so do their beliefs about child rearing. Studying parents' beliefs about 'intelligence', Harkness and Super (1993) found that parents all over the world choose to describe children in terms of intelligence, but that the construct 'intelligence' varies among cultures. American parents highlight aggressive and competitive aspects of intelligence. By contrast, in a Kipsigis community in Kenya the connotation of intelligence was 'helpful and responsible behaviour.' Intelligence for Dutch parents was associated with 'individual enduring effort, directed by strength of will and organized by clarity of purpose.' Harkness and Super summarized Dutch parents' view on development as: "Don't push" (Harkness & Super, 1993). Dutch and American parents also differ in their beliefs about early stimulation. Examining how critical "stimulation" is for Dutch parents, Rebelsky (1967) concluded that regular feeding and sleeping is considered as more important than playing. She observed that "even if a Dutch parent sees a child awake and looking around, she or he is not likely to respond

because of fear of spoiling the baby or because of the belief that a baby in this age range should sleep and not play or stay awake." This belief in the 'three R's' - *rust* (rest), *regelmaat* (regularity) and *reinheid* (cleanliness) may be outdated now. Nonetheless, in a more recent study Super and colleagues (Super, Harkness, Tijen, Van der Vlugt, Fintelman, & Dijkstra, 1996) concluded that regularity and rest still were highly valued in the Netherlands.

Conclusion and discussion

"Don't push" could be considered many Dutch parents' credo regarding the development of literacy. Overall we have the impression that in kindergarten Dutch children receive very little instruction in the alphabet and how letters and sounds fit together. Parents are not encouraged to support writing at home. Probably many parents and teachers of young children classify such activities as 'pushy' because they run ahead of systematic instruction in third grade and beyond that. Given our studies of name writing reported in this dissertation, it is our opinion that parents and teachers thus underestimate the pleasure that young children derive from writing attempts and the importance of implicit instructions in letter-sound knowledge, for example in how to spell one's name, for the development of phonemic awareness. Emergent literacy skills facilitate beginning reading instruction and raise the chance that children become proficient readers (Bus, 2005; Spira et al., 2005).

It is encouraging that educational innovation projects for young children create opportunities for activities that stimulate writing, as well as opportunities to talk about the alphabet and how letters sound in words. In this way kindergarten children are taught some letters of the alphabet and how writing works, for example, by learning to write their name in a similar way to what some children (mainly from higher educated families) do at home. Children need these opportunities to develop emergent literacy skills. They do not start to think phonetically being completely on their own (Van Kleef and Tomesen, 2002a).

REFERENCES

Adi-Japha, E., Levin, I., & Solomon, S. (1998). Emergence of representation in drawing: The relation between dynamic and referential aspects. *Cognitive Development, 13,* 25–51.

Aram, D. (2004). *Early literacy interventions: The relative roles of storybook reading, alphabetic activities, and their combination.* Manuscript submitted for publication.

Aram, D., & Biron, S. (2004). Joint storybook reading and joint writing interventions among low SES preschoolers: Differential contribution to early literacy. *Early Childhood Research Quarterly, 19,* 588-610.

Aram, D., & Levin, I. (2001). Mother-child joint writing in low SES: Sociocultural factors, maternal mediation, and emergent literacy. *Cognitive Development, 16,* 831-852.

Arrow, A., Fletcher-Flinn, C. M., & Nicholson, T. (2003). "That's my name": Possible precursors to reading development. *Poster presented at the Annual Conference of the Society for Scientific Study of Reading,* Boulder, Colorado, USA.

Baumann, J. F., Hoffman, J. V., Duffy-Hester, A. M., & Moon Ro, J. (2000). The first R yesterday and today: U.S. elementary reading instruction practices reported by teachers and administrators. *Reading Research Quarterly, 35,* 338-377.

Bialystok, E. (1991). Letters, sounds, and symbols: Changes in children's understanding of written language. *Applied Psycholinguistics, 12,* 75-89.

Bialystok, E. (1995). Making concepts of print symbolic: Understanding how writing represents language. *First language, 15* , 317-338.

Bloodgood, J. W. (1999). What's in a name? Children's name writing and literacy acquisition. *Reading Research Quarterly, 34,* 342-367.

Both-de Vries, A. & Bus, A. (2004). *Visies van leerkrachten op de vroege leesontwikkeling in Nederland en de VS anno 2000* [Elementary reading instruction practices reported by teachers in the Netherlands and the U. S.A., anno 2000]. In: Van der Aalsvoort, G. M. (Ed.), Eén kind, één plan. Naar een betere afstemming van jeugdzorg en onderwijs voor jonge risicokinderen (pp.119-133). Leuven: Acco.

Brenneman, K., Massey, C., Machado, S. F., & Gelman, R. (1996). Young children's plans differ for writing and drawing. *Cognitive Development, 11,* 397-419.

Burrows, E. H. (1994). Words adults choose to describe preschool children's writing and other graphic products. *Child Study Journal, 24,* 327-339.

Bus, A. G. (1995). *Geletterde peuters en kleuters* [Literate preschoolers and kindergartners]. Amsterdam: Boom.

Bus, A. G. (2005). *Two more miles to go. Naar een balans tussen foneemtraining en betekenisverwerving in de bestrijding van leesproblemen en (pseudo-)dyslexie* [Two more miles to go. Preventing reading difficulties: Looking for a balance between phoneme training and acquiring meaning]. Leiden: Leiden University.

Bus, A. G., & Both-de Vries, A. C. (1997). *Succesvolle voorbeelden van lezen en schrijven in de onderbouw* [Looking for effective reading and writing activities in kindergarten]. Amersfoort: CPS.

Bus, A. G., & Kruizenga, T. H. (1986). Leren lezen op een Vrije School [Learning to read at a Free School]. *Pedagogische Studiën, 63*, 145-158.

Bus, A. G. & Van IJzendoorn, M. H (1999). Phonological awareness and early reading: A meta-analysis of experimental training studies. *Journal of Educational Psychology, 91,* 403–414.

Byrne, B. (1996). The learnability of the alphabetic principle: Children's initial hypothesis about how print represents spoken language. *Applied Psycholinguistics, 17*, 401-426.

Byrne, B. (1998). *The Foundation of Literacy. The Child's Acquisition of the Alphabetic Principle*. East Sussex, UK: Psychology Press Ltd.

Clay, M. (1973). *What did I write?* Auckland, NZ: Heinemann.

Cohen J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for behavioral science (2nd ed.)*. Hillsdale, NJ: Lawrence Erlbaum.

De Jong, T. M., & Bus, A. G. (2002). Quality of book-reading matters for emergent readers: An experiment with the same book in a regular or electronic format. *Journal of Educational Psychology, 94,* 145-155.

Dunsmuir, S., & Blatchford, P. (2004). Predictors of writing competence in 4- to 7-year-old children. *British Journal of Educational Psychology, 74*, 461-483.

Ehri, L. C., & Wilce, L. S. (1987). Does learning to spell help beginners learn to read words? *Reading Research Quarterly, 23*, 47-65.

Evans, M. A., Fox, M., Cremaso, L., & McKinnon, L. (2004). Beginning reading: The views of parents and teachers of young children. *Journal of Educational Psychology, 96*, 130-141.

Ferreiro, E., & Teberosky, A. (1982). *Literacy before schooling*. Portsmouth: NH: Heinemann.

Ferreiro, E., Pontecorvo, C., & Zucchermaglio, C. (1996). Pizza or Piza? How children interpret the doubling of letters in writing. In C. Pontecorvo, M. Orsolini, B. Burge, & L. B. Resnick (Eds.), *Children's early text construction* (pp.145-165). Mahwah, NJ: Erlbaum.

Foulin, J. N. (2005). Why is letter-name knowledge such a good predictor of learning to read? *Reading and Writing*, 18, 129-155.

Freeman Institute (1985). Return to Glory, ancient Egyptian Photo gallery. Retrieved March 4, 2005, from http://www.freemaninstitute.com/RTGhistory.htm

Frith, U. (1985). Beneath the surface of dyslexia. In: K.E. Patterson, J.C. Marshall & M. Coltheart (Eds.), *Surface dyslexia. Neuropsychological and cognitive studies of phonological reading* (pp. 301-330). London: Erlbaum.

Frost, J. (2001). Phonetic awareness, spontaneous writing, and reading and spelling development from a preventive perspective. *Reading and Writing, 14,* 487-513.

Gillanders, C., & Jimenez, R. T. (2004). Reaching for success: A close-up of Mexican immigrant parents in the USA who foster literacy success for their kindergarten children. *Journal of Early Childhood Literacy, 4,* 243 – 269.

Gombert, J. E., & Fayol, M. (1992). Writing in preliterate children. *Learning and Instruction, 2,* 23-41.

Harkness, S., & Super, C. (1993). The developmental Niche: Implications for children's literacy development. In: L. Eldering & P. Leseman (Eds.). *Early intervention and culture Preparation for literacy: the interface between theory and practice*. Unesco Publishing.

Janssen-Vos, F, Pompert, B., & Vink, H. (1991). *Naar lezen, schrijven en rekenen*. [Early reading, writing and arithmetic]. Assen: Van Gorcum.

Janssen-Vos, F. & Pompert, B.(2001). *Startblokken van Basisontwikkeling: Een goed begin voor peuters en jongste kleuters* [Be ready to go: How to create a good start for preschoolers]. Assen: Van Gorcum.

Kamberelis, G., & Perry, M. (1996). A microgenetic study of cognitive reorganization during the transition to conventionall literacy. In D. F. Lancy (Ed.), *Children's emergent literacy* (pp. 93-123). Westport, CT: Praeger.

Kamii, C., & Manning, M. (1999). Before 'invented' spelling: Kindergartner's awareness that writing is related to the sound of speech. *Journal of Research in Childhood Education, 14,* 1, 16-25.

Karmiloff – Smith, A. (1992). *Beyond modularity: A developmental perspective on cognitive science*. Cambridge, MA: MIT Press.

Kellogg, R. (1969). *Analyzing children's art*. Palo Alto, CA: National Press.

Lavine, L. (1977). Differentiation of letterlike forms in prereading children. *Developmental Psychology, 23*, 89-94.

Levin, I., & Aram, D. (2004). Children's names contribute to early literacy: A linguistic and social perspective. In D. Ravid & H. Bat-Zeev Shyldkrot (Eds.), *Perspectives on language and language development*. Dordrecht: Kluwer Academic Publishers.

Levin, I., Both–de Vries, A. C., Aram, D., & Bus, A. G. (2005). Writing starts with own name writing: From scribbling to conventional spelling in Israeli and Dutch children. *Applied Psycholinguistics, 26*, 463-477.

Levin, I., & Bus, A. G. (2003). How is emergent writing based on drawing? Analyses of children's products and their sorting by children and mothers. *Developmental Psychology, 39*, 891-905.

Levin, I., & Korat, O. (1993). Sensitivity to phonological, morphological and semantic cues in early reading and writing in Hebrew. *Merrill-Palmer Quarterly, 39*, 213-232.

Levin, I., Korat, O., & Amsterdammer, P. (1996). Emergent writing among Israeli children: Cross linguistic commonalities and Hebrew specific issues. In G. Rijlaarsdam, H. van der Bergh & M. Couzijn, (Eds.), *Theories, models and*

methodology: Current trends in research of writing (pp. 398-419). Amsterdam: Amsterdam University Press.
Levin, I., Patel, S., Margalit, T., & Barad, N. (2002). Letter-names: Effect on letter saying, spelling, and word recognition in Hebrew. *Applied Psycholinguistics, 23*, 269-300.
Levin, I., Ravid, D., & S. Rapaport, (1999). Developing morphological awareness and learning to write: A two-way street. In T. Nunes (Ed.). *Learning to read: An integrated view from research and practice,* 1999, (pp. 77-104). Dordrecht: Kluwer Academic Publishers.
Levin, I., Share, D. L., & Shatil, E. (1996). A qualitative-quantitative study of preschool writing: Its development and contribution to school literacy. In C. M. Levy & S. Ransdaell (Eds.), *The science of writing* (pp. 271-293). Mahwah, NJ: Erlbaum.
Levin, I., & Tolchinsky-Landsman, L. (1989). Becoming literate: Referential and phonetic strategies in early reading and writing, *International Journal of Behavioral Development, 12*, 369-384.
Levy, B., Gong, Z., Hessels, S., Evans, M. A., & Jared D. (2006). Understanding print: Early reading development and the contributions of home literacy experiences. *Journal of experimental child psychology, 93*, 63.
Luria, A. (1929/1983). The development of writing in the child. In: M. Martlew (Ed.), *The psychology of written language* (pp.237-277). New York: John Wiley.
Mandel, D. R., Jusczyk, P. W., & Pisoni, D. B. (1996). Infants' recognition of the sound patterns of their own names. *Psychological Science, 6*, 314-317.
Martens, P. A. (1999). Mommy, how do you write "Sarah?": The role of name writing in one child's literacy. *Journal of Research in Childhood Education, 14*, 5-15.
McGee, L. M., & Purcell-Gates, V. (1997). "So what's going on in research on emergent literacy?" *Reading Research Quarterly, 32,* 310-318.
Neuman, S. B., & Roskos K. (1997). Literacy knowledge in practice: Contexts of participation for young writers and readers. *Reading Research Quarterly, 32*, 1, 10-32.
Olson, D. R. (1996). Towards a psychology of literacy: on the relations between speech and writing. *Cognition, 60*, 83-104.
Ravid, D. (2004). Hebrew orthography and literacy. In R. M. Joshi & P. G. Aaron (E*ds.), Handbook of orthography and literacy*. Mahwah, NJ: Lawrence Erlbaum Associates.
Rebelsky, F. G. (1967). Infancy in two cultures. *Nederlands Tijdschrift voor de Psychologie en haar grensgebieden, 22*, 379-385.
Richgels, D. J., Poremba, K. J., & McGee, L. M. (1996). Kindergartners talk about print: Phonemic awareness in meaningful contexts. *The Reading Teacher, 48,* 632-642.
Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development, 73*, 445-460.

Serpell, R., Baker, L., & Sonnenschein, S. (2005). *Becoming literate in the city: The Baltimore early childhood project*. Cambridge: Cambridge University Press.

Shanahan, T., Cunningham, A., Lonigan, C. J., Escamilla, K., Molfese, V., Fischel, J., Schat schneider, C., Landry, S. H., & Strickland, D. (2004). The National Early Literacy Panel: Findings from a synthesis of scientific research on early literacy development. *Paper presented at the National Reading Conference,* San Antonio, TX, USA.

Share, L. C., & Levin, I. (1999). Learning to read and write in Hebrew. In M. Harris, & G. Hatano (Eds.), *Learning to read and write: A cross linguistic perspective*. Cambridge: Cambridge University Press.

Shatil, E., Share, D. C., & Levin, I. (2000). On the contribution of kindergarten writing to grade 1 literacy: A longitudinal study in Hebrew. *Applied Psycholinguistics, 21,* 1-21.

Sorsby, A., & Martlew, M. (1994). The effect of task on preschool children's ability to represent meaning through graphic skills. *British Journal of Developmental Psychology, 12,* 351-364.

Spira, E. G., Bracken, S. S., & Fischel, J. E. (2005). Predicting improvement after first-grade reading difficulties: The effects of oral language, emergent literacy, and behavior skills. *Developmental Psychology, 41,* 225-234.

Strickland, D. S., & Shanahan, T. (2004). Laying the Groundwork for Literacy - Preliminary findings from the National Early Literacy Panel. *Educational Leadership, 6,* 74-77.

Sulzby, E. (1986). Writing and reading: Signs of oral and written language organization in the young child. In W. H. Teale & E. Sulzby (Eds.), *Emergent literacy, writing and reading*. Norwood NJ: Ablex.

Sulzby, E., Barnhart, J., & Hieshima, J. (1989). Forms of writing and rereading from writing: A preliminary report. In J. Mason (Ed.), *Reading-writing collection* (pp. 31–63). Neeham Heights, MA: Allyn & Bacon.

Super, C. M., Harkness, S., Van Tijen, N., Van der Vlugt, E., Fintelman, M., & Dijkstra, J. (1996). The three R's of Dutch childrearing and the socialization of infant arousal. In: S. Harkness & C. M. Super (Eds.), *Parents' cultural belief systems. Their origins, expressions, and consequences*. New York: The Guilford Press.

Teale, W. H., & Sulzby, E. (1986). Emergent literacy as a perspective for examining how young children become writers and readers. In W. H. Teale & E. Sulzby (Eds.), *Emergent literacy, writing and reading*. Norwood NJ: Ablex.

Temple, C., Nathan, R., Temple, F., & Burris, N. A. (1993). *The beginnings of writing*. Boston: Allyn & Bacon.

Tolchinsky, L. (2003). *The cradle of culture and what children know about writing and numbers before being taught*. London: Lawrence & Erlbaum.

Tolchinsky Landsmann, L. (1988). Form and meaning. *European Journal of Psychology of Education, Vol III, 4,* 385-398.

Tolchinsky Landsmann, L., & Karmiloff-Smith, A. (1992). Children's understanding of notations as domains of knowledge versus referential-communicative tools. *Cognitive Development, 7,* 287-300.

Tolchinsky Landsmann, L., & Levin, I. (1985). Writing in preschoolers: An age-related analysis. *Applied Psycholinguistics, 6,* 319-339.

Tolchinsky Landsmann, L., & Levin, I. (1987). Writing in 4- to 6-year-olds: Representation of semantic and phonetic similarities and differences. *Journal of Child Language, 14,* 127-144.

Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge: Harvard, 1999

Treiman, R., & Broderick, V. (1998). What's in a name? Children's knowledge about the letters in their own names. *Journal of Experimental Child Psychology, 70,* 97-116.

Treiman, R., & Kessler, B. (2003). The role of letter names in the acquisition of literacy. *Advances in child development and behavior, 31,* 105-133..

Treiman, R., & Kessler, B. (2004). The case of the case: Children's knowledge and use of upper and lowercase letters. *Applied Psycholinguistics, 25,* 3, 413-428.

Treiman, R., Kessler, B., & Bourassa, D. (2001). Children's own names influence their spelling. *Applied Psycholinguistics, 22,* 555-570.

Treiman, R., Tincoff, R., & Richmond-Welty, E. D. (1997). Beyond zebra: Preschoolers' knowledge about letters. *Applied Psycholinguistics, 18,* 391-409.

Van der Kooy-Hofland, V. A. C. (2004). *Een onderzoek naar de mening van ouders van kinderen uit groep 3 en 4 van de basisschool over geletterheid en hun verantwoordelijkheid ten aanzien van geletterdheid.* [Parents'view on their responsibility for their young children's emergent literacy]. Unpublished manuscript, Universiteit Leiden.

Van Kleef, M., & Tomesen, M. (2002a). *Stimulerende lees- en schrijfactiviteiten in de onderbouw. Prototypen voor het creëren van interactieve leessituaties en het ontlokken van (nieuw) schrijfgedrag* [Teaching reading and writing in kindergarten. Prototypes of. interactive reading and writing activities]. Nijmegen: Expertise centrum Nederlands.

Van Kleef, M., & Tomesen, M. (2002b). *Werken aan taalbewustzijn. Prototypen voor het stimuleren van fonologisch bewustzijn in betekenisvolle contexten* [Stimulating phonological awareness. Prototypes of instruction embedded in a meaningful context]. Nijmegen: Expertise centrum Nederlands.

Vernon, S. A., & Ferreiro, E. (1999). Writing development: A neglected variable in the considerations of phonological awareness. *Harvard Educational Review, 69,* 395-415.

Villaume, S. K., & Wilson, L. C. (1989). Preschool children's explorations of letters in their own names. *Applied Psycholinguistics, 10,* 283-300.

Weigel, D. J., Martin, S. S., & Bennett, K. K. (2005). Ecological influences of the home and the child-care center on preschool-age children's literacy development. *Reading Research Quarterly, 40,* 2, 204-233.

Welsch, J.G., Sullivan, A., & Justice, L. M. (2003). That's my letter!: What preschoolers' name writing representations tell us about emergent literacy knowledge. *Journal of Literacy Research, 2,* 757-776.

Zali, A. (1997). Naissances [Origin]. In: Zali, A., & Berthier, A. (Eds.). *L'Aventure des écritures. Naissances* [The origin of writing]. Bibliothèque nationale de France.

SUMMARY

From a very young age on children enjoy the production of graphic representations. They are generally pleased that their vigorous motions leave visible marks on the paper. Young children playing restaurant imitate writing producing pseudocursive scribbles or strings of pseudoletters and from a young age they are eager to write their proper name. The studies in this dissertation aimed at testing which knowledge about writing develops before formal schooling starts and how this develops, in order to form ideas of instruction and literate activities suitable for young children. Is children's' knowledge restricted to the form of writing or do they develop insight into the way writing forms relate to a referent?

The studies in Chapters 2 and 3 tested whether young children are aware of "the double face" of letters, namely that letters represented by simple patterns of ink on paper, at the same time point at something beyond them. Rather than hypothesizing that children have this understanding from the moment they begin to produce written-like scribbles, we considered that children gain insight with increasing writing experiences. The studies in Chapters 4, 5 and 6 tested how name writing influences children's conceptualization of writing. Does name writing develop faster than word writing, and do the letters of a child's own name prompt symbolic and phonetic writing?

The first study described in Chapter 2 tested how children of three different age groups (3½-4, 4-4½, 4½-5) denoted a referent's meaning when the task was to write. Do they represent meaning the same way in writing and drawing (for instance, a human figure with 'huge ears' representing 'rabbit') thus neglecting features of writing of which they are aware, *or* do printed words clearly differ from drawings (for instance, a series of abstract small signs ordered linearly)? As children do not understand that writing is a symbolic system, we expected that they often draw when the task is writing, resorting to object-related figurative devices neglecting features of writing of which they are aware. We expected the latter effect especially when the task elicits a dilemma: to represent the meaning of the word or to represent "print." Children may also solve the dilemma creatively by confounding the two notational systems: conserving the features of writing and introducing drawing-like representations such as number of signs or color (for instance representing tomato with a written-like scribble in red).

To explore children's factual behavior at different points in development we asked 96 children to write and to draw16 words and in each age group we tested whether similar figurative devices appeared in both products meant to be writing

and products meant to be drawing. To facilitate observation of object-related iconic devices in writing we selected word pairs varying in form (ball-book), size (mother-baby), number (tree-three trees), and color (tomato-sun). To create a dilemma - representing the meaning of the word or representing print – one task emphasized the function of writing (i.e., make notes on a sheet of paper to memorize the content of a box). I refer to this task as *labeling*. The other set of words was dictated, without providing any explanation of the function of making notes. I will refer to this second task as *dictating*. All children wrote 16 words: 8 words were labels to be added to a box and 8 similar words were dictated. With the help of drawing and writing scales, each product of writing was assigned to one of the following types of products: *drawing* (those products exclusively scored on the drawing scale), *hybrid form* (those products included drawing as well as writing features in one product), *illustration* (a separate drawing was added to a writing product), *or writing* (products that exclusively scored on the writing scale).

Children younger than 4 often replaced writing by drawing (21% of all writing products) but beyond 4½ drawings were very rare (2% of all writing products). In the stage in between (4 - 4½) drawings mainly appeared when children produced labels to memorize the content of boxes. This age group produced numerous drawings (18%) but only when the referential function of writing was strongly emphasized. *Hybrid forms* and especially those including number and color features, seemed to appear regardless of task (dictation or labeling) and to continue well into more advanced stages of writing when children begin to use conventional letters and numbers. A limitation of the study is that the present sample selected from higher educated families may be far ahead of the main stream. I suppose that the reported age limits vary per sample.

In a follow-up study described in Chapter 3, we asked 16 experts familiar with young children's writing to sort and name the products of Study 1 thus testing the hypotheses of Study 1 in another way. Each expert did 3 tasks: *1.* sorting the 192 drawings and writings of all 96 children for one stimulus (e.g., rabbit) into piles: writing and drawing *2.* sorting the 32 writings and drawings of one child into piles: writing and drawing, *3.* matching each of the 16 writings and drawings with the sixteen stimuli. We expected that sorting of dictated words would be easier than sorting of labels because making labels children often replaced writing by drawing. Assuming that drawing would decrease with age, we expected that writing of older children would be recognizable whatever the task characteristics. We also expected that experts would not be very successful in naming the writing products except for those products that include drawing features. In other words, experts would be less successful as children are less inclined to replace writing by drawing.

Making two piles of all 192 products representing the same referent, experts were least successful in the youngest group: These children often made drawings instead of products of writing. In the older groups, experts had far fewer problems in distinguishing writing from drawing, indicating that compared to the youngest group children in this age range were familiar with features of writing. The middle group scored at chance level on products that were produced as labels and

at above chance level for dictated words, showing that the task of writing labels tempted the children in this age group to make drawings. Sorting one child's products into two piles - one for writing and one for drawing - even sorting of the youngest group was at above chance. When experts were permitted to compare one child's drawings and writings it was only then that experts noticed features such as small form that are more typical of writing than of drawing. Experts never succeeded in naming products of writing of the youngest and the oldest group at above chance level probably for different reasons. The youngest group often drew but their drawings missed relevant details that allow solid recognition. The oldest group, by contrast, produced written-like forms but phonetic representation was at most rudimentary and therefore not supportive of naming *what* children had written down. However experts succeeded at above chance level in naming labels written by the middle group, probably because this age group often produced drawings when they were asked to write a label to memorize the content of a box.

In short both studies demonstrated in different ways that, from an early age, children are familiar with rudimental features of writing but this does not imply that they use writing as a notational device. We found that it is only when children are quite advanced in producing written symbols that they stop replacing writing by drawing. Apparently children only gradually realize that letters and not figurative devices represent the referent in writing. Children beyond 4½ from middle and higher educated families no longer revert to drawing when they write. From that age they produce letter strings. Inspecting the data I noticed that children overused the letters of their proper name.

To explore how familiarity with their written names promotes children's literacy I designed, in collaboration with an Israeli research group, a study that is described in Chapter 4, to test whether name writing develops faster than word writing. From early on, many children are exposed to their proper name written on their personal possessions, and children are encouraged to copy their name. We expected that the unique experience of name recognition and name writing advances children's knowledge of writing features with respect to their name prior to print in general. In other words, children's proper name is the first word to represent universal features of writing like small form, linearity and segmentation.

To test this hypothesis we examined whether the development of children's writing of their own names outperformed their writing of dictated words in samples of children ranging from 2-5 years of age, immersed in Hebrew or Dutch, and recruited from low to high SES. Analyses were based on four data sets collected in three studies: *1.* Study I with 243 Israeli children from low SES, 122 3-4 nursery school children aged 3-4 and 121 preschoolers aged 4-5, *2.* Study II with 96 children (48 Israeli and 48 Dutch) from low-middle to high-middle SES, equally divided among three age groups (2;4–2;11, 3;0–3;7, and 3;8–4;5), *3.* Study III with 96 Dutch children from middle to high SES equally divided among three age groups (3½-4, 4-4½, 4½-5). In all studies each child was asked to write his/her name and then several words were dictated, one at a time. In all studies, all products of writing were coded on a scale developed by Levin and Bus (2003).

All age groups and both nationalities were more advanced in writing their proper names than in writing dictated words, and they progressed more rapidly on name writing. Moreover, name writing and dictated word writing reveal a certain degree of independence, with words producing stronger correlations among themselves than with name. This highlights the fact that children developed specific knowledge of their own name. For writing their own name, children scored on all levels of the writing scale, which suggests that universal features of writing like linearity and small forms are copied from name writing.

Another study of name writing, described in Chapter 5, explored how increasing familiarity with their proper name affects children's' spellings of new words. We tested whether *1.* the proportion of letters from the name in random letter strings exceeded the proportion of letters not from the name, and *2.* letters from the name were among the letters that were used phonetically. We argued that grown-ups unintentionally instruct children on how letters of the name sound in words (e.g. "look, the Z from Zilva"), thus teaching phonemic awareness. It seemed plausible therefore that phonetic writing would start with letters from the name and especially with the first letter. However, as children often select letters from the name randomly it is hard to decide whether phonetic use of letters is only accidental or intentionally. Letters of the name often will match sounds in dictated words but their selection was purely accidental. We therefore classified letters from the name that indeed matched sounds in dictated words as being used *ambiguously*, thus leaving open the possibility that letters from the name were being selected randomly. As letters from the name were more frequently selected because they match sounds in the dictated word we expected that, contrary to letters not from the name, letters from the name would be more often used ambiguously than randomly. This effect may be restricted to the first letter of the name, because we guessed that in daily life this letter (e.g., "'D' from David") is named and sounded out more often than other letters from the name. Put differently, instruction may start with the first letter of the proper name.

To test these hypotheses we selected 35 of the children from the study in Chapter 2 who mainly used conventional symbols (letters or numbers) to write new words. Per child and per letter we examined whether: *1.* the letter was a (first) letter from the name or any other letter; and *2.* the letters were used randomly or ambiguously. Per child we calculated whether the first letter from the proper name was used ambiguously versus randomly in 16 dictated words, taking into account the chance that the child could use a particular letter ambiguously versus randomly in those 16 words. For instance, when the first letter was 'S' there were 12 words in which this child could use S randomly and we calculated which proportion of those words included S. The same was done for 4 words in which this child could use S ambiguously. A similar calculation was carried out for all other letters from the name and all other letters that appeared in this child's writing that were not from the name. We discerned two levels of writing among the 35 selected children - 17 children who produced random letter strings nearly without any phonetic writing and 18 children who wrote per word one letter phonetically - and then we compared for each group, separately, the proportion of

ambiguously versus randomly used letters. If the proportion of randomly written name letters was equal to the proportion of ambiguously written name letters, it seems probable that children did not select name letters to represent sounds that they had recognized in a dictated word. In contrast, we assumed that when children recognize the sounds of letters from the name in dictated words then the proportion of ambiguously written name letters would surpass the proportion of randomly written name letters.

The results of this study lend further support to the hypothesis that name writing influences general writing skills. First, children mainly selected letters from their own name (M = 52%). Children who produced random letter strings were more acquainted with the first letter of their name than with other letters. They produced the first letter of the name (in 37% of all dictated words) more often than any other letter. Second, the results lend plausibility to the idea that the next stage in writing development, producing writing that reflects phonetic features of writing, begins with the first letter of the name, probably because children are more familiar with the sound of this letter than with the sounds of any other letter. Children who started to write phonetically used the first letters of their name more often ambiguously than randomly. These children also typically often selected one of the other name letters (in 50% of the dictated words) but for those letters ambiguous and random use did not differ. The same was true for other frequently appearing letters, not from the name.

Speculation at to whether somewhat more advanced children first expand phonetic writing to other letters from their name meant that in a third study about name effects we tested whether children more advanced than those in the previous study would generalize phonetic writing first to other letters from their name or directly to other non-name letters. A second purpose of this study was to replicate, in a group of children from less educated families, the result from Chapter 5, this being that phonetic writing starts with the first letter of the name. As these parents may be less inclined to stimulate name writing, such effects may not appear in a low SES sample even when children are older.

To answer these questions we analyzed data collected for another purpose (de Jong & Bus, 2002). Just like in the study described in Chapter 5, children in this study wrote their proper name and a series of dictated words. We selected those children who mainly used conventional symbols to represent dictated words. Thus 79 Dutch children 4- to 6-years old were selected from the complete sample of 88 children. We distinguished three levels of writing according to children's scores on the writing scale (Levin & Bus, 2003). Children at *level 1* produced random letter strings nearly without any phonetic writing (N = 26), similar to the lowest level children in the study described in Chapter 5; children at *level 2* (N = 37) wrote one letter phonetically in some words similar to the highest level children in the study described in Chapter 5; children at *level 3* (not represented in the study described in Chapter 5) wrote more than 1 letter phonetically in some words resulting in a number of readable invented spellings (N = 16). For instance, those children wrote 'kas' to represent 'kaas' [cheese].

Results replicated the results from the study described in Chapter 5. Children who were just starting to write phonetically (level 2) often used the first letter of their own name to represent sounds; the percentage of ambiguously written first letters exceeded that of randomly written first letters. Other letters from their own name often appeared in products of writing (in about half of the words) but not because of the match with sounds in the word. More advanced writers (level 3) used both kinds of letters, from their name and not from their name, more often ambiguously than randomly. The first letter of their name seems to stimulate understanding of the alphabetic principle. After a short period in which children only represent the first letter of their name phonetically their understanding generalizes to other letters and phonetic writing is no longer restricted to name letters. A limitation of the study is that about half of the letters of the alphabet did not appear in the 7 dictated words, so 35% of the children was excluded from testing effects of first name letter. In future studies it might be worthwhile to select per child a set of words with the first letter appearing in half of the words.

In sum, from an early age (in the present study aged 4 and over) children are familiar with features of writing; and grown-ups succeed in sorting their writing and drawing products. However, this does not mean that children are aware of "the double face "of print. To denote meaning younger children revert to drawing. Somewhat older children (in the present study those aged 4½ and over) gradually stop reverting to figurative devices and make a shift to symbolic writing. Writing starts with the letters of children's proper name because they are most familiar with forms of these letters or because they are aware that these letters are symbols for a referent. Phonetic writing starts with the first letter from the proper name whatever it is. This result makes it likely that some instruction is required to support children's phonemic awareness; to the extent that grown-ups teach letter-sound relationships they often start with the first letter of familiar words like the proper name. Writing one's own name provides an impetus for a form of informal instruction thus contributing to learning to read.

Chapter 8 reviews a series of studies of early writing activities in families and schools: To what extent do Dutch families and schools establish writing activities? In this concluding chapter, we paid particular attention to: *1.* how Dutch parents perceive their role in teaching reading and writing, *2.* the specific writing activities of Dutch children at home and in school, and *3.* the degree to which cognitive stimulation is culturally bound and how the Netherlands differ from other Western countries like the Unites States and Canada. We give examples of activities that are meant to stimulate knowledge about the letters of the proper name in preschool and kindergarten classrooms.

To conclude, this dissertation further develops a theory of how children become literate. By investigating how two common everyday activities closely related to writing, namely drawing referents and name writing, affect young children's writing of new words, we have clarified which concepts about writing develop before formal instruction in reading and writing starts in first grade. The findings of this research enable us to develop a method based on authentic activities typical for this age group. Departing from children's proper name phonetic writing is

stimulated. Based on an exploration of early writing activities in Dutch families and schools, it is suggested that Dutch parents and teachers may underestimate how implicit instructions about the alphabet, for example in how to spell one's own name, affect success in learning to read and write.

NEDERLANDSE SAMENVATTING (DUTCH SUMMARY)

Al heel jong hebben kinderen er plezier in te schrijven. Tijdens spel doen ze alsof ze een telefoonnummer opschrijven of een recept uitschrijven. Ze oefenen hun eigen naam of de naam van een andere bekende persoon en schrijven die het eerst leesbaar. Het doel van de in dit proefschrift bijeengebrachte studies was te onderzoeken welke vroege kennis over schrijven jonge kinderen ontwikkelen voor zij op school conventioneel leren schrijven, en hoe die kennis tot ontwikkeling komt. Beperkt de kennis van kinderen zich tot het maken van schrijfachtige krabbels die steeds meer op echte letters gaan lijken, of ontwikkelen ze ook al inzicht in hoe de schrijfvorm betekenis weergeeft? Welke instructie of activiteiten dragen bij aan de vroege schrijfontwikkeling?

De eerste twee studies zijn opgezet met het oogmerk te testen of kinderen begrijpen dat schrijfpatronen niet louter vormen zijn, maar symbolen die verwijzen naar een betekenis. Wij verwachtten niet dat inzicht in de relatie tussen schrijfvorm en betekenis van meet af aan aanwezig zou zijn, maar dat jongere kinderen eerder geneigd zijn te gaan tekenen als hen gevraagd wordt een notitie te maken als geheugensteuntje. In de volgende drie hoofdstukken staat het eerste leesbare schrijfproduct centraal: de eigen naam. Komt kennis over schrijven eerder tot uitdrukking in de eigen naam dan in andere woorden met als gevolg dat de eigen naam eerder herkenbaar is als 'schrijven' dan andere woorden? Raken kinderen door het schrijven van hun naam vertrouwd met lettervormen *of* leren ze van naam schrijven ook hoe letters met klanken samenhangen en zijn de letters van de eigen naam de eerste letters die ze correct dat wil zeggen fonetisch schrijven in niet geoefende woorden?

De eerste studie, beschreven in hoofdstuk 2, onderzocht hoe jonge kinderen de betekenis van een referent weergaven als wij hen vroegen woorden op te schrijven. Imiteren zij 'schrijven', door het maken van vormen die de impressie geven van schrijven (bijvoorbeeld: lineair weergegeven kleine losse eenheden) *of*, geven zij net als bij tekenen de betekenis weer met figuratieve kenmerken (tekenen zij bijvoorbeeld 'grote oren ' als zij 'konijn' schrijven) en negeren ze hun kennis over de vorm van schrijven? Wij kozen een taak - op een kartonnen doos schrijven wat erin zit - waarvan wij verwachtten dat die kinderen voor een lastig dilemma plaatst. Kinderen die beseffen dat de geschreven vorm betekenis weergeeft, produceren schrijfvormen ook als die onleesbaar zijn en niet helpen om te onthouden wat er in de doos zit. Jongere en minder ervaren kinderen gaan tekenen omdat zij nog niet beseffen dat schrijfvormen betekenis hebben.

Een andere in eerdere studies beschreven oplossing kan zijn dat kinderen op creatieve wijze schrijven en tekenen vermengen tot iets dat lijkt op schrijven, maar wel iconische kenmerken heeft die aan de betekenis refereren: tomaat opschrijven met een rode schrijfkrabbel.

Zes en negentig kinderen (3½ tot 5 jaar oud, evenredig verdeeld over 3 leeftijdsgroepen van 3½ - 4 jaar, 4 - 4½ jaar en 4½ - 5 jaar) lieten wij 16 woorden tekenen en schrijven. We gebruikten woorden als 'doos' en 'tomaat' waarvan niet aannemelijk is dat kinderen ze eerder hebben geoefend. De opdracht varieerde. De helft van de woorden ($N = 8$) schreven en tekenden ze met een duidelijk doel (om te onthouden wat in een doos zit), en de andere helft werd gedicteerd. In beide opdrachten specificeerden wij wat precies van hen verwacht werd: schrijven of tekenen. Bij het uitleggen van de doosjestaak benadrukten we hoe belangrijk het was de betekenis weer te geven: we lieten de kinderen zien dat hun geschreven woorden dienden om de inhoud van een doosje te onthouden (de doosjes taak wordt hier verder aangeduid als het schrijven van *labels*). In de andere taak schreven of tekenden de kinderen een reeks *gedicteerde woorden*. In beide taken gebruikte we woordparen die verschilden in 'aantal' (boom - drie bomen), 'kleur' (tomaat - zon), 'grootte' (moeder – baby) of 'vorm' (bal – boek) om gemakkelijk herkenbare, figuratieve kenmerken uit te lokken. Vervolgens is getest in hoeverre figuratieve kenmerken als kleur, vorm en aantal in de schrijfproducten voorkwamen en in hoeverre schrijfkenmerken als kleine vorm, complexe vorm en variatie in vorm voorkwamen. Binnen de variatie aan producten onderscheidden we vier hoofdtypen: *schrijven* (producten met alleen schrijfkenmerken), *tekenen* (producten met alleen figuratieve kenmerken), *hybride vormen* (schrijf- en tekenkenmerken in één product: bijvoorbeeld een schrijfkrabbel in rood) en *illustraties* (een tekening bij een vorm met kenmerken van schrijven).

De jongste kinderen (3½ - 4 jaar) tekenden vaak als ze moesten schrijven (21% van alle schrijfopdrachten was een tekening), maar tekenen in plaats van schrijven kwam bij de oudste groep (4½ - 5 jaar) nauwelijks meer voor (2%). Deze groep gebruikte vaak (in 50% van de woorden) conventionele letters maar slechts bij uitzondering (9%) fonetisch. In de middengroep (4 - 4½ jaar) tekenden kinderen een aanzienlijk deel van de woorden (18%) hoewel gevraagd was die te schrijven, maar alleen als ze labels maakten. In het dictaat, daarentegen, concentreerden ze zich erop iets te maken dat oogde als schrijven en negeerden ze de betekenis. In alle leeftijdsgroepen kwamen veel hybride vormen voor, vooral als de referent duidelijke kenmerken van aantal of kleur had. Veel kinderen (42%) schreven 'drie bomen' met een drie keer herhaalde letterreeks of dropjes met zwarte of bruine letters (47%). De studie is uitgevoerd onder kinderen afkomstig uit gezinnen met hoger opgeleide ouders. In een groep bestaande uit kinderen uit lager opgeleide gezinnen zouden we vermoedelijk een trager ontwikkelingsverloop vinden.

In de vervolg studie in hoofdstuk 3 zijn de data van de eerste studie voorgelegd aan experts, en is getoetst of hun classificatie van producten als schrijven en tekenen tot dezelfde conclusie leidt als de studie in hoofdstuk twee: lang voor kinderen in staat zijn correct te schrijven gebruiken ze consequent schrijfachtige

symbolen als ze schrijven. Wij verwachtten dat de experts er in zouden slagen zelfs in de jongste groep schrijven van tekenen te onderscheiden, maar dat schrijven minder goed herkenbaar zou zijn als kinderen labels maken. Voorts is getoetst in hoeverre de producten 'leesbaar' waren voor volwassenen. Wij verwachtten dat de experts veel moeite zouden hebben met het 'lezen' van de schrijfproducten, maar vooral als kinderen weinig figuratieve kenmerken toevoegen aan schrijven. Dit zou betekenen dat leesbaarheid met de leeftijd eerder af- dan toeneemt.

Zestien volwassenen -allen vertrouwd met het schrijven en tekenen van jonge kinderen - kregen 3 taken voorgelegd: *1.* sorteren van alle schrijf - en tekenproducten ($N = 192$) van één van de 32 woorden in twee stapels: schrijven en tekenen, *2.* sorteren van de 32 schrijf – en tekenproducten van een zelfde kind en *3.* matchen van de 16 geschreven respectievelijk getekende producten van een zelfde kind met de 16 stimuli.

De experts hadden geen probleem bij het sorteren van de schrijf- en tekenproducten van de oudste groep. Schrijven en tekenen werd boven kansniveau gesorteerd. Ook bij de doosjestaak leverde het sorteren geen probleem op; kennelijk wekken ook die producten een sterke impressie van schrijven. Bij iets jongere kinderen (de middengroep) slaagden de experts er wel in de gedicteerde woorden boven kansniveau te sorteren maar niet de labels. Het feit dat labels op kansniveau werden gesorteerd als tekenen of schrijven, duidt er op dat de 4 - 4½ jarigen vaak tekenden. De schrijfproducten van de jongste kinderen sorteerden de experts alleen boven kans niveau als zij tekenen en schrijven van één kind konden vergelijken (taak 2), en een enkel schrijfkenmerk als kleine vorm de doorslag kon geven. De jongste kinderen slaagden er dus nog niet in de schrijfvorm te imiteren. Om uiteenlopende redenen slaagden de experts er niet in te bepalen wat een kind had proberen te schrijven, ook al waren ze bekend met de set woorden. De jongste kinderen tekenden vaak, maar gaven daarbij zo weinig details weer dat experts de tekeningen niet herkenden; zelfs als de kinderen van de oudste groep één of meer correcte letters per woord schreven, slaagden de experts er niet in de woorden te lezen, vermoedelijk omdat naast correcte letters veel incorrecte letters waren weergegeven. Alleen de labels van de middengroep herkenden de experts boven kansniveau, waarschijnlijk omdat deze kinderen dan vaak tekenden en hun tekeningen redelijk gedetailleerd waren.

Kortom, deze studie bevestigt dat kinderen al jong enigermate bekend zijn met rudimentaire vormkenmerken van schrijven maar nog niet weten dat schrijven een systeem is om betekenis weer te geven. Als het product leesbaar moet zijn, vervangen kinderen schrijven door tekenen. De oudste groep doet dat niet meer, hoewel die er evenmin in slaagt leesbaar te schrijven. Deze kinderen maken doorgaans willekeurige letterreeksen met daarin veel letters van hun naam. Kennelijk realiseren zij zich dat letters betekenis weergeven. Raadselachtig blijft of ze inderdaad verwachten dat hun reeksen letters en letterachtige vormen als geheugensteun kunnen dienen.

Van jongs af aan komen kinderen hun naam tegen op persoonlijke bezittingen en worden zij aangemoedigd hun naam te schrijven. Samen met Israëlische onderzoekers hebben we onderzocht of beginnende schrijvers hun naam op

een hoger niveau schrijven dan andere niet geoefende woorden. We verwachtten dat jonge kinderen hun eigen naam eerder conventioneel schrijven dan andere woorden, en dat zij universele kenmerken van schrijven, zoals lineariteit, losse eenheden en variatie, het eerst toepassen bij het schrijven van hun naam.

Om deze hypothesen te toetsen vergeleken wij het schrijven van de eigen naam met het schrijven van gedicteerde nieuwe woorden in groepen kinderen van 2 – 5 jaar oud. De kinderen spraken Nederlands of Hebreeuws en waren afkomstig uit laag tot hoog opgeleide gezinnen. We voerden analyses uit op data verzameld in drie studies: *1.* een studie met Israëlische kinderen afkomstig uit een laag SES, 3 en 4 jaar oud; *2.* een studie met Nederlandse en Israëlische kinderen afkomstig uit een laag tot gemiddeld SES, 2, 3 en 4 jaar oud; en *3.* een studie met Nederlandse kinderen afkomstig uit een gemiddeld tot hoog milieu, 3, 4 en 4½ jaar oud. In alle studies schreven de kinderen hun eigen naam en een aantal gedicteerde woorden. Voor alle schrijfproducten is gescoord in hoeverre het product een vorm voorstelt (in tegenstelling tot krassen), schrijfachtig is of conventioneel is, en of schrijfkenmerken als lineair, meerdere tekens en variatie zijn weergegeven.

Kinderen van alle leeftijdsgroepen, van beide nationaliteiten en uit de verschillende milieus schreven hun naam op een hoger niveau dan andere nieuwe woorden; de eigen naam was het eerste leesbare woord. Bovendien sprong de manier waarop kinderen hun naam schreven er duidelijk uit: ze gebruikten minder schrijfkenmerken bij gedicteerde woorden dan bij de naam. Beide resultaten demonstreren de unieke kennis van de eigen naam. Bij het schrijven van hun naam doorliepen de kinderen dezelfde fasen als bij het schrijven van nieuwe woorden: eerst willekeurige, kleine vormen, vervolgens letterachtige vormen en ten slotte conventionele letters. Door hun naam te schrijven oefenen kinderen niet alleen specifieke kenmerken van schrijven zoals Hebreeuwse of Nederlandse letters, maar ook universele kenmerken zoals lineariteit of segmentatie. Maar oefenen kinderen met de letters van hun naam ook meer geavanceerde kenmerken van schrijven zoals symbolisch en fonetisch gebruik van letters?

In een vervolgstudie (hoofdstuk 5) onderzochten we *1.* of in willekeurige letterreeksen letters van de naam van kinderen vaker voorkomen dan andere letters en *2.* of kinderen letters van hun naam eerder dan andere letters fonetisch schrijven. Kennis van de vorm begint met de eigen naam. Geldt dit voor symbolisch en fonetisch schrijven en zijn de letters van de eigen naam de eerste letters die kinderen fonetisch gebruiken als ze een onbekend woord schrijven? Het is voorstelbaar dat kinderen met het schrijven van hun naam informele instructie uitlokken met het gevolg dat volwassenen de letters uit de naam van kinderen als eerste benoemen en verklanken (bijvoorbeeld “daar staat Zilva” of “kijk, de Z van Zilva”). Doordat kinderen zo leren om de letters van de naam te koppelen aan klanken begint fonetisch schrijven met de letters van de eigen naam. Echter, als kinderen een letter uit de eigen naam kiezen om een nieuw woord te schrijven en de letter komt inderdaad in het woord voor, kan niet zonder meer geconcludeerd worden dat ze die letter hebben gekozen omdat ze de klank in het

woord herkenden. Uit diverse studies is gebleken dat kinderen de letters van hun naam vaker gebruiken in letterreeksen dan andere letters. Een letter uit de naam zal dus in veel gevallen toevallig gekozen zijn, omdat ze die letter nu eenmaal vaak kiezen. Om de mogelijkheid open te laten dat naamletters toevallig gekozen zijn, ook al correspondeert de klank van de geschreven letter met de klank in een gedicteerd woord, hebben we deze letters als *ambigu* gekarakteriseerd. We karakteriseerden letters als *willekeurig* als kinderen een letter selecteerden hoewel die niet in het woord hoort. Wij verwachtten dat wanneer kinderen nieuwe woorden proberen te schrijven, het percentage naamletters het percentage niet naamletters overtreft. Verder verwachtten wij dat als fonetisch schrijven met de letters van de naam begint, het percentage *ambigu* gebruikte naamletters hoger zou zijn dan het percentage *willekeurig* geselecteerde naamletters, terwijl de percentages gelijk zijn bij letters die kinderen ook kunnen schrijven en geregeld selecteren maar die niet in de naam voorkomen. We sloten niet uit dat deze effecten alleen optreden bij de eerste letter van de naam omdat instructie van volwassenen vaak is toegespitst op deze letter ("dat is de N van Nena").

Uit de in hoofdstuk 2 beschreven dataset selecteerden we kinderen die letterreeksen maakten (N = 35). Per kind en per letter scoorden we *1.* of een letter een (eerste) letter van de naam was of een willekeurige andere letter; en *2.* of een letter ambigu was gebruikt of willekeurig. Berekend is hoe vaak kinderen in 16 woorden een (eerste) naamletter ambigu cq. willekeurig gebruikten, waarbij we rekening hielden met de kans om dat te doen. Bijvoorbeeld, Susan kon de eerste letter van haar naam (S) in 12 woorden willekeurig schrijven en in 4 woorden correct. Als Susan in 2 woorden de 'S ' terecht weergeeft en in 3 woorden willekeurig, is haar score op ambigu gebruik van de eerste letter van haar naam 50% en haar score op willekeurig gebruik 25%. Eenzelfde berekening voerden we uit voor letters die niet in de naam voorkomen. Wij onderscheidden twee schrijfniveaus. Kinderen uit niveau 1 schreven bijna altijd willekeurige letterreeksen: ze schreven slechts in enkele woorden (hooguit 2 van de 16 gedicteerde woorden) een letter correct. Kinderen uit niveau 2 schreven in meerdere (3 of meer) gedicteerde woorden één of meer letters correct. Hogere niveaus kwamen in deze steekproef niet voor. Voor beide niveaus afzonderlijk is per letter het percentage ambigu en het percentage willekeurig berekend, en is een vergelijking gemaakt tussen het ambigu en willekeurig gebruik van respectievelijk de eerste letter van de naam, de overige letters van de naam en letters niet van de naam. Als het percentage naamletters dat kinderen ambigu schreven even hoog is als het percentage naamletters dat willekeurig is gebruikt, is aannemelijk dat de letters niet waren geselecteerd omdat kinderen de klank van de letters in woorden herkenden. Maar als het percentage ambigue naamletters significant hoger is dan willekeurig gebruik en kinderen de letters dus vaker gebruikten in woorden waar de betreffende letter voorkwam, is aannemelijk gemaakt dat kinderen naamletters selecteerden omdat ze de klank van de letters in een woord herkenden.

De resultaten van de studies ondersteunen de hypothese dat naam schrijven kinderen niet alleen vertrouwd maakt met schrijfvormen, maar ook met meer

geavanceerde kenmerken van schrijven zoals het symbolisch en fonetisch gebruik van letters. Ten eerste waren de meeste letters (52%) die kinderen gebruikten om nieuwe woorden te vormen, letters uit hun naam. In letterreeksen kwam de eerste letter van de naam tweemaal zo vaak voor (in 37% van alle geschreven woorden) als de overige letters van de eigen naam. Ten tweede ondersteunen de resultaten de hypothese dat de stap naar fonetisch schrijven het gevolg is van leerprocessen die door het schrijven van de eigen naam in gang zijn gezet. Kinderen zijn het meest vertrouwd zijn met de klank en de vorm van de eerste letter en gebruiken die letter het eerst als symbool voor een klank in niet geoefende woorden. De groep kinderen die enkele correcte letters schreef, gebruikte de eerste letter van de naam vaker ambigu dan willekeurig. Hoewel deze kinderen vaak één van de overige letters van hun naam selecteerden (in ongeveer de helft van de gedicteerde woorden), was dit niet gemotiveerd door het herkennen van de klanken bij die letters; overige naamletters kozen ze even vaak willekeurig als ambigu. Hetzelfde gold voor de andere letters van het alfabet die kinderen wel eens gebruikten in hun letterreeksen. Wat is de volgende stap in de schrijfontwikkeling: fonetisch schrijven van de letters uit de naam of is er geen verschil tussen naamletters en andere letters uit het alfabet?

In een vervolgstudie hebben we onderzocht of iets verder gevorderde kinderen dan in de vorige studie, fonetisch schrijven eerst generaliseren naar de overige letters van hun naam dan wel direct naar letters die niet in hun naam voorkomen. Een ander doel van deze studie was de resultaten van hoofdstuk 5 – te weten dat fonetisch schrijven begint met de eerste letter van de naam - te repliceren in een andere groep kinderen afkomstig uit gezinnen met lager geschoolde ouders. Als naam schrijven in deze gezinnen minder aandacht krijgt, is te verwachten dat deze kinderen pas op school vertrouwd raken met de letters van hun eigen naam.

Om deze hypothesen te toetsen analyseerden we data die voor een ander doel waren verzameld. Uit de totale groep van 88 kinderen zijn 79 kinderen (4 – 6 jaar oud) geselecteerd die in een dictaat van nieuwe woorden letterreeksen schreven. Wij onderscheidden drie schrijfniveaus. Kinderen van niveau 1 schreven bijna altijd willekeurige letterreeksen (analoog aan de kinderen van het laagste schrijfniveau in hoofdstuk 5), kinderen van niveau 2 schreven in een aantal woorden een correcte letter (analoog aan de kinderen van het hoogste schrijfniveau in hoofdstuk 5) en kinderen van niveau 3 schreven sommige woorden leesbaar. De laatste, niet in hoofdstuk 5 vertegenwoordigde, groep kinderen schreef bijvoorbeeld ‘kas’ of ‘ks’voor het gedicteerde woord ‘kaas’.

De resultaten repliceren de uitkomsten van de studie uit hoofdstuk 5. In nieuwe woorden gebruikten kinderen die een aantal correcte letters schreven (niveau 2), de eerste letter van hun naam het eerst correct. Zij gebruikten de eerste letter van hun naam vaker ambigu dan willekeurig als ze een onbekend woord moesten opschrijven. Ook de overige letters uit hun naam schreven zij frequent (in de helft van het aantal woorden), maar niet omdat de klank voorkwam in het woord; deze letters werden even vaak willekeurig als ambigu geschreven. De verst gevorderde kinderen, niveau 3, schreven alle letters vaker ambigu dan willekeurig. Deze

resultaten bevestigen dat vertrouwdheid met de eerste letter van de eigen naam kinderen helpt het alfabetisch–fonetische principe van onze taal te begrijpen. Na een korte periode waarin zij alleen de klank van eerste letter van hun naam herkennen in gedicteerde woorden, generaliseert deze kennis naar andere letters en blijft fonetisch schrijven niet langer beperkt tot letters van de eigen naam. Een beperking van de studie is dat slechts een beperkt aantal letters van het alfabet (ongeveer de helft) voorkwam in de gedicteerde woorden, met het gevolg dat 35% van de kinderen uitviel bij het testen van de effecten van de eerste letter van de naam. Het zou zinvol zijn in toekomstige studies per kind een set woorden te selecteren met in de helft van de woorden de eerste letter van de eigen naam.

Resumerend mag worden geconcludeerd dat kinderen al vroeg (in ons onderzoek op 4 jarige leeftijd) vertrouwd raken met vormkenmerken van schrijven: volwassenen kunnen hun schrijf - en tekenproducten sorteren. Maar dat betekent niet dat kinderen begrijpen dat schrijfvormen betekenis hebben: als zij betekenis moeten weergeven kiezen ze voor tekenen. Iets oudere kinderen (in ons onderzoek 4½ jaar en ouder) begrijpen dat letters symbolen zijn: zij gebruiken niet langer figuratieve kenmerken om te refereren aan betekenis, maar letters. Zij gebruiken de letters van hun naam in letterreeksen, omdat ze die letters als vorm kennen en misschien ook omdat ze beseffen dat die letters betekenis hebben. Fonetisch schrijven begint met de eerste letter van de naam, welke het ook is. Dit zou erop kunnen duiden dat inzicht in het alfabetisch - fonetisch karakter van ons schrift niet zonder een vorm van instructie ontstaat. Volwassenen wijzen kinderen dikwijls op de eerste letter van een bekend woord - vaak de eigen naam - als zij hen attenderen op letter-klank combinaties ("kijk, de Z van Zilva"). Het schrijven van de eigen naam geeft aanleiding tot informele instructie in letternamen en letterklankcombinaties en draagt zo bij aan succes bij beginnend schrijven en lezen.

In hoeverre zijn in Nederland schrijfactiviteiten met jonge kinderen thuis en op school ingeburgerd? In hoofdstuk 8 exploreerden we de praktijk door na te gaan welke visie Nederlandse ouders hebben op lezen en schrijven van jonge kinderen, hoe belangrijk Nederlandse ouders en leraren vroege vormen van schrijven vinden, en wat gangbare schrijfactiviteiten voor jonge kinderen zijn in Nederlandse gezinnen en scholen. Aan de hand van voorbeelden illustreren we welk soort activiteiten in kleuterklassen schrijven op gang moeten brengen.

Tot slot: Dit proefschrift draagt bij aan een theorie van ontluikende geletterdheid. Door de invloed van tekenen en naam schrijven op het schrijven van niet geoefende woorden te onderzoeken is duidelijker geworden welke inzichten kinderen ontwikkelen voor zij op school instructie krijgen in lezen en schrijven. De resultaten van dit onderzoek maken het mogelijk een leergang te ontwikkelen die gebaseerd is op voor deze leeftijdsgroep authentieke activiteiten; vanuit de eigen naam wordt fonetisch schrijven in gang gezet. Op basis van een eerste exploratie van het schrijven van jonge kinderen thuis en op school constateren we dat Nederlandse ouders en leraren helaas onderschatten wat het schrijven van de eigen naam kan bijdragen aan later succes bij het leren lezen en schrijven.

DANKWOORD

Het was spannend na een loopbaan in de onderwijsbegeleiding binnen te stappen in de onderzoekswereld. Op koers gehouden door een eminente loods ging ik op zoek naar de kwintessens van de vroege schrijfontwikkeling. Graag maak ik hier gebruik van de gelegenheid mensen te bedanken die mij op deze zoektocht hebben geïnspireerd en aangemoedigd.

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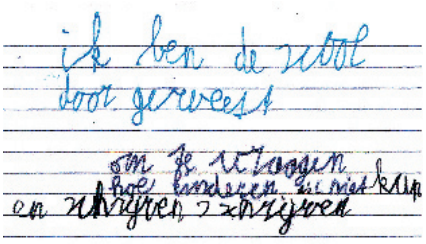
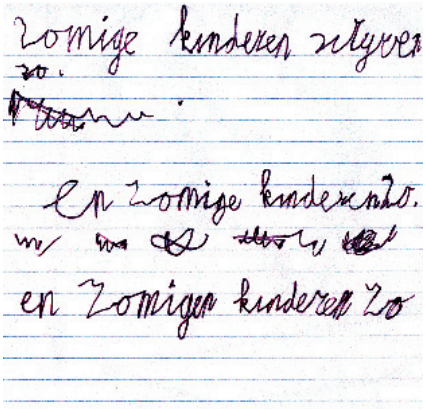
Werk en privé zijn voor mij nooit gescheiden domeinen geweest. Ik begon in alle stilte aan dit onderzoek, maar uiteindelijk was in de directe familie oud en jong betrokken. Lieve Mam, ontzettend bedankt voor de grote precisie waarmee je de data codeerde en gereed maakte om in te voeren. Grootzoon Djamilo je hebt mij buitengewoon verrast, toen je liet weten dat je op je eigen basisschool een onderzoekje had gedaan naar het schrijven van kleuters (zie figuur 1). Lieve Iman, Nena, Zilva en Shanna, aan de huiskamertafel toverden jullie mij vele inspirerende voorbeelden van ontluikend schrijven voor ogen. Taco, Twirre, Step, Pierre, Joost en Nicolien, bedankt voor de op afroep beschikbare hulp bij computerproblemen, de vroegtijdige bloemen, het 'voorbeeldige' proefschrift, maar in de eerste plaats voor het vertrouwen in de Weesperstraat-Kinderopvang en de vele intieme momenten die dat met zich meebrengt. Wim, loods in het leven, het is plezierig werken aan boord mede dankzij de zorg die je hebt besteed aan de computer faciliteiten. En varen blijft een feest dankzij de rust en overtuiging waarmee je ons vele havens in en uit loodst.

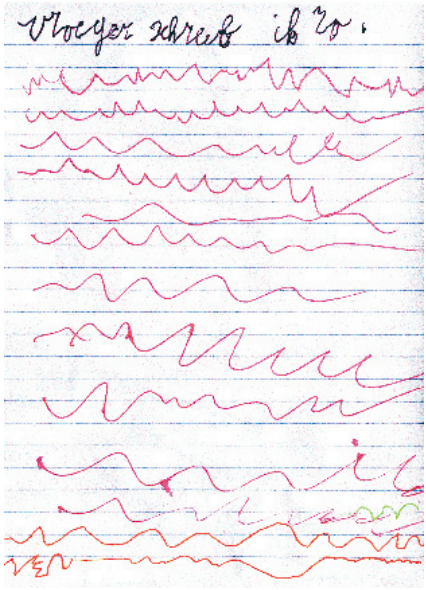
Figuur 1: Verslag van het onderzoek "Hoe schrijven kleuters", uitgevoerd door Djamilo (7;6) in de kleuterklassen van zijn basisschool.



bladzijde 1



bladzijde 2



bladzijde 3

CURRICULUM VITAE

Anna de Vries was born May 3, 1942 in Amsterdam, The Netherlands. In 1961 she completed her secondary education (Gymnasium ß) at the 'Vossius Gymnasium' in Amsterdam. In 1970, after a period of family life, she studied Educational Sciences at the University of Amsterdam and graduated (MA) in 1976. From 1976 to 1991 she was appointed as staff developer and school psychologist (qualified as GZ psychologist, 1986) at an Education Advisory Service (Het ABC, Amsterdam). After a sabbatical she worked as a Guest Staff Member at Leiden University (1995-2005), in 1999 starting her doctoral research. Currently she is appointed as instructor in the program Learning Problems and Impairments, Leiden University, and as a coworker in research of emergent literacy.

Children as young as three years old succeed in imitating adult writing. About a hundred years ago, Alexander Luria's case studies suggested that to denote meaning 6-year-olds' scribbles include figurative devices such as color or number: a black scribble for 'smoke' and four small strokes to represent four little chicks. In our literate society, children as young as four years old use symbols such as letters and numbers. Writing begins with emotionally charged words: the child's own name or mama. Letters from those words influence how children write unknown words. They compose letter strings (randomly ordered symbols) with letters from these names. Surprisingly name letters also give the initial impetus to phonetic spelling. When children begin to invent partly correct spellings, they start with representing the first letter of their proper name phonetically.

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