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

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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.