



How do prephonological writers link written words to their objects?



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ARTICLE INFO

Article history:

Received 22 June 2015

Received in revised form

17 December 2015

Accepted 3 February 2016

Available online 17 February 2016

Keywords:

Writing

Spelling

Symbols

Iconicity

Morphology

Phonology

Syllables

Prephonological spellers

ABSTRACT

Two experiments studied prephonological writers, namely children who do not yet use letters to represent phonemes. The experiments tested the hypothesis that these children link elements of writing not to the phonological forms of spoken words but to physical characteristics of the words' referents. In Experiment 1, prephonological spellers ($n = 36$, mean age 4 years, 3 months) used more elements on average to write plural nouns such as *cows* than singular nouns such as *cow*. Prephonological spellers in Experiment 2 ($n = 42$, mean age 4 years, 4 months) did not use more elements to write longer verbs such as *buying* than shorter ones such as *buy*. Thus, the results of Experiment 1 suggest that prephonological spellers are sensitive to the quantity of the referent rather than the number of phonemes, syllables, or morphemes in the word. That is, prephonological spellers have some tendency to treat writing as iconic.

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1. Introduction

Writing is an important symbol system that children in modern societies need to master. Children begin learning about some aspects of writing well before they receive formal instruction in school (Puranik & Lonigan, 2014; Treiman & Kessler, 2014). Consider Fig. 1, the production of a U.S. five-year-old who was asked to try to write the word *dot*. In its *outer form*, this production looks rather similar to an English word that an adult would write. For example, it is composed of separate shapes that are identifiable as letters of the Latin alphabet and that are arranged along a horizontal line. The letters bear no relation to the sounds in *dot*, however. Even children who are not yet able to produce identifiable letters make somewhat different sorts of productions when asked to write than when asked to draw (Brenneman, Massey, Machado, & Gelman, 1996; Rowe, 2008; Treiman & Yin, 2011). Some of these differences are illustrated in Fig. 2, which shows a U.S. four-year-old's picture of the sun and her attempt to write the word *sun*. Although the written word does not include any identifiable letters, it is smaller and denser than the drawing.

Although young children may produce writing-like marks, a true grasp of how writing works requires them to learn about the *inner structure* of writing, that is, about how written words symbolize their objects. For example, learners of English must

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Fig. 1. Production of a US 5-year-old who was asked to write the word *dot*.

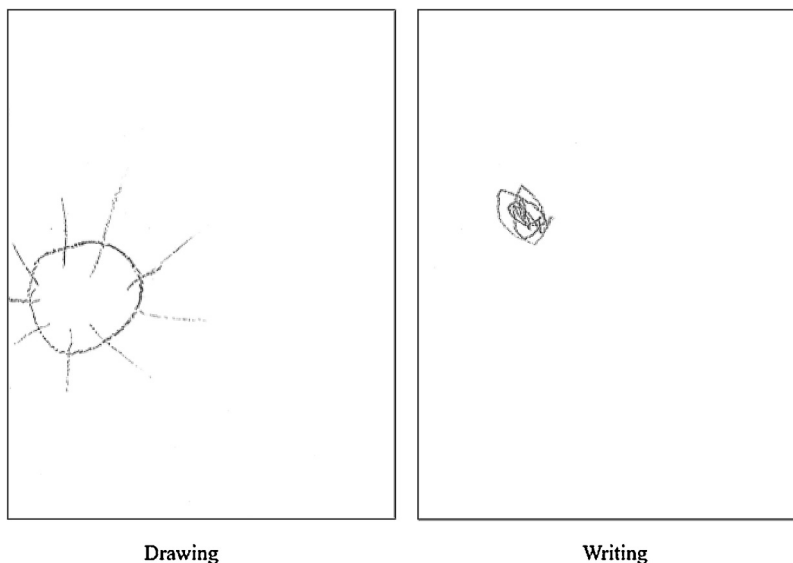


Fig. 2. Productions of a US 4-year-old in response to requests to draw a picture of the sun (left panel) and to write the word *sun* (right panel).

understand that each letter in the written word *dog* stands for a phoneme in the spoken form of the word that means ‘dog’. *Prephonological* writers like those who made the productions in Figs. 1 and 2 do not appear to link written words to their objects via the phonemes in the corresponding spoken words. How, then, do these children conceptualize writing? Recent findings show that prephonological writers are more likely to use the same spelling or a similar spelling when they write the same word twice in succession than when they write different words (Treiman, Decker, Kessler, & Pollo, 2015) and that young children have some expectation that a written word should be read the same way on different occasions (Treiman, Hompluem, Gordeon, Decker, & Markson, in press). These findings suggest that children make some sort of link between a spelling and a word or a concept. Here we test the idea that these links are based on certain physical characteristics of the object to which a word refers rather than on the linguistic form of the word itself (Ferreiro & Teberosky, 1982; Luria, 1978; Tolchinsky, 2003). According to this view, children expect writing to have some degree of iconicity, that is, some degree of similarity to its object.

Productions that reflect properties of the objects whose names are being written were first reported with Russian children who were asked to write down sentences as an aid for later recall (Luria, 1978). In some cases, 4- and 5-year-olds seemed to represent in their writing the sizes, shapes, or colors of the objects mentioned. One child scribbled very dark marks to represent black coal, for example. Levin and Bus (2003) observed that Israeli and Dutch children would sometimes do things such as write the word for *sun* in yellow, and Pontecorvo (1995) mentioned an Italian child who used two marks to write *gatto* ‘cat’ and three marks to write *gatti* ‘cats’. Similarly, Homer and Olson (1999) reported that some English-speaking 4-year-olds used more marks when asked to write *two dogs* than when asked to write *one dog*. Such productions may be attempts to represent physical properties of the objects referred to, in these examples color or quantity, rather than attempts to represent linguistic properties of the corresponding words. Productions of these sorts are often called *referential writing*.

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