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# Early differentiation between drawing and writing in Chinese children

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### ABSTRACT

Children under 3½ years of age or so are often thought to produce the same types of scribbles for writing and drawing. We tested this idea by asking Chinese 2- to 6-year-olds to write and draw four targets. In Study 1, Chinese adults judged the status of the productions as writings or drawings. The adults performed significantly above the level expected by chance even with the productions of 2- to 2½-year-olds. In Study 2, we examined specific characteristics of the children's writings and drawings. Although the younger children's scribbles bore little resemblance to the correct characters, they tended to be smaller, sparser, and more angular than their artwork, with less filling in. Differences were also found in paper use and implement use. Children did not appear to distinguish writing from drawing for their own names before they did so for other targets.

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### Introduction

Written words and pictures are similar in some ways and different in others. They are similar in that they both involve marks that appear on the surfaces of objects. Both are artificial rather than natural. However, some aspects of the surface forms are different. For example, writing is often composed of small black marks on a white background. Pictures are often larger and more colorful, and they are more likely to consist of outlines that are filled in. Writing and pictures also differ in their symbolic function. The marks of writing designate specific units of a language. For example, the written form

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*cat* derives its meaning from the fact that its units represent a linguistic form, which in turn represents a meaning. One must know the conventions of the English writing system, as well as the English language, to produce and interpret the marks. A realistic picture of a cat, in contrast, derives its meaning from the similarities between its form and that of its referent. The picture is iconic in a way that the written form is not.

Early knowledge about the characteristics of writing, which some researchers have called print awareness or concepts of print, appears to be related to the later development of conventional literacy (e.g., Tunmer, Herriman, & Nesdale, 1988). Some researchers have examined young children's knowledge about print by assessing their ability to distinguish between writing and drawing in perceptual tasks (e.g., Lavine, 1977). In the current study, we took another approach: examining children's productions when asked to write and to draw. For reasons to be explained here, we examined this ability among young Chinese children.

Adults often use the same term to refer to young children's writings and drawings, calling them *scribbles* in English or *tú yā* (涂鸦) in Mandarin Chinese. They often assume that scribbling is purely a motor activity and that children do not concern themselves with the appearance of the product. Indeed, a number of researchers have suggested that most children younger than 3½ or 4 years of age produce similar marks for writing and drawing, failing to differentiate the two. Gombert and Fayol (1992) studied the writings of French children between ages 2;10 (years;months) and 3;10, observing that the majority of the writings "exhibit similar workmanship" (p. 32) to the children's pictures. Only a few of the children in their study, most on the older end of the age range, were judged to make a distinction. Bader and Hildebrand (1991) stated that nearly 60% of U.S. children between ages 3;6 and 4;6 failed to distinguish writing from drawing in their production, and Noyer and Baldy (2005) characterized approximately half of the written productions of a group of French children with a mean age of 3;4 as showing no such differentiation.

Other investigators have reported that children sometimes include pictorial elements in their writing, potentially another way in which they confuse it with drawing. This phenomenon was first reported by Luria (1929/1978), who asked Russian children to write down sentences so as to remember them. He mentioned that 4- and 5-year-olds sometimes represented the colors, sizes, or shapes of objects mentioned in the sentences in their writing, for example, scribbling with a black pencil to write *smoke* but using other colors for other words. Levin and Tolchinsky Landsmann (1989) reported that Israeli 5- and 6-year-olds, when asked to write pairs of words such as *tomato* and *cucumber*, sometimes wrote tomato in red and cucumber in green. The use of referential color was fairly common in this study, more common than writing a word for a large object with more marks or larger marks than writing a word for a small object. Tolchinsky-Landsmann and Levin (1985) made similar observations among Israeli 3- to 5-year-olds, and Ferreiro and Teberosky (1982) observed that Argentinean children sometimes produced longer lines of scribble when writing words that stood for large objects than when writing words that stood for small objects.

Although some researchers have claimed that children younger than 3½ or 4 years of age do not usually distinguish between writing and drawing in production, others (e.g., Karmiloff-Smith, 1992) have suggested that they do. The U.S. children in several case studies appeared to make some distinctions between writing and drawing before 3 years of age (Baghban, 1984; Grinnell & Burris, 1983; Martens, 1996; Schickedanz, 1990). In another study, a teacher researcher at a U.S. preschool concluded that by 3 years of age, 15 of 18 children produced different types of marks for writing and for art (Rowe, 2008). However, the characteristics of the marks were not examined quantitatively in these studies, and statistical analyses were not reported.

Levin and Bus (2003) went beyond the previous work by asking adults who were not present during young children's mark making to classify the products as writing or drawing and by subjecting the results to statistical analysis. Levin and Bus examined drawings and writings produced by Israeli and Dutch children ages 2;4 to 3;0, 3;1 to 3;9, and 3;10 to 4;5. The children were given a choice of felt-tipped markers of different colors with which to write and draw specified targets. In a task that we refer to as sorting by target, mothers with children in the same age range as those in the study were shown all of the children's productions of a given target and were asked to classify each as writing or drawing. According to the statistical tests that Levin and Bus presented, significantly above-chance performance on both writings and drawings was not consistently found for children in either of the

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