On Teaching
Left-Handed Children to Write

Dexter Kozen

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Department of Computer Science
Cornell University
Ithaca, New York 14853-7501

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Cornell University

Abstract

It is argued that the handwriting method commonly taught to left-handed children is incorrect and harmful. The disadvantages of this method are noted, and a new method alleviating these disadvantages is proposed.

"The above Method will suit all Sizes, and both Sexes; the Fat and the Lean, the Tall or the Short, Men of bulky Size, and Ladies laced in their Stays, will all find this Method easy and practicable; they will write without Fatigue, and with a great deal of Freedom..."

—William Leakey, *A Discourse on the Use of the Pen*, ca. 1740 [10]

THE SOUTHPAW, according to various estimates, accounts for roughly ten percent of the general population. Despite its numbers, this unsung minority seems ever fated to endure the offenses of a right-handed world, from pay phones to pencil sharpeners, can openers to coffee grinders, scissors to scythes.

Foremost among such offenses is the way left-handed children are taught to write. For years, left-handedness was considered an undesirable aberration, to be discouraged at all costs [2,7]. Until relatively recently, left-handed school children were forced to write with their right hands; there is a flood of evidence that this practice caused stuttering and other emotional problems [1,9,12,13,14]. Lewis Carroll's stammering has been attributed to the fact that he was a changed left-hander [1].

Although the physiology of left-handedness is not well understood [2,7,8,11,13], there is no lack of well-intentioned articles explaining how left-handed children should be taught to write [2,4,5,6,12,15]. In this note I argue that the most widely

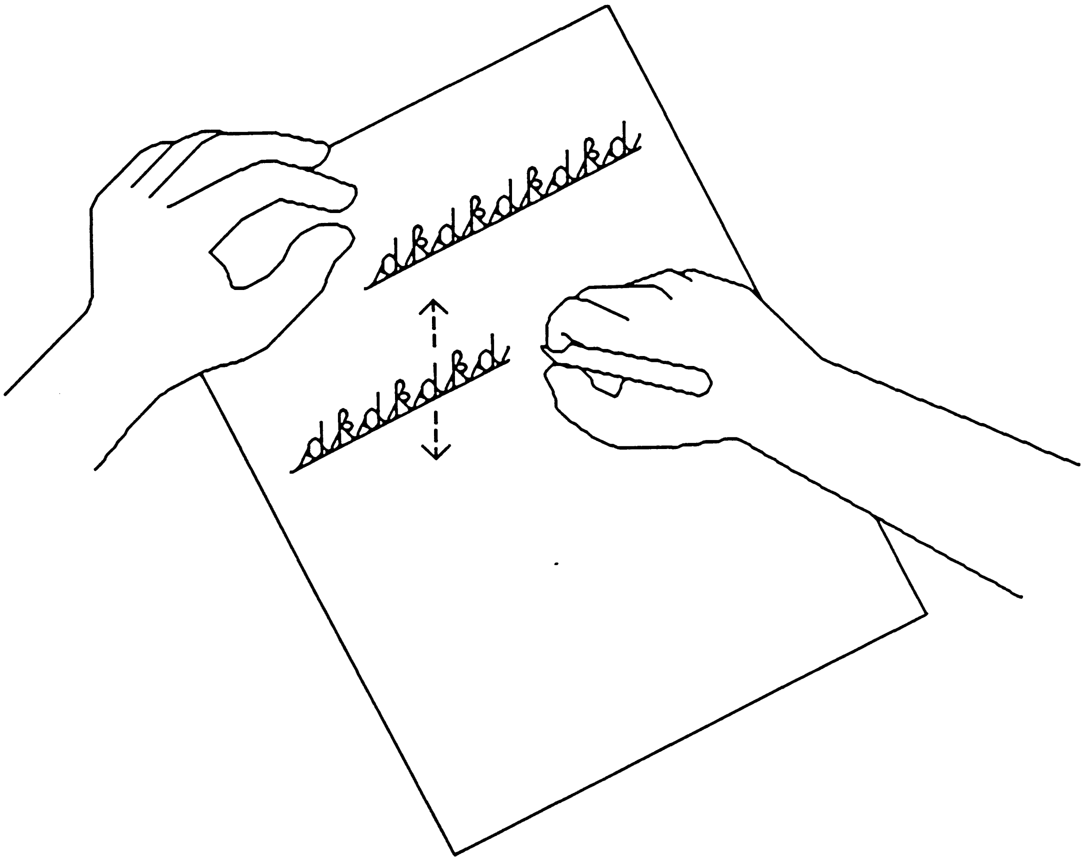

Figure 1: The method of choice for right-handers.

accepted method is not only incorrect, but quite harmful, and is in fact responsible for lifetimes of cramped fingers and illegible scrawl. The disadvantages of this method are explained, and a new method alleviating these disadvantages is proposed.

The method usually taught to left-handed children is the mirror image of the right handed method (Figures 1, 2). Clark [2] argues that, apart from the obvious asymmetry in the direction of writing with respect to the body, the two situations are essentially symmetric, and that the method of Figure 2 is the most natural orientation for left-handers. At first glance, this argument is quite convincing; the method of Figure 1 is exceedingly comfortable for right-handers, therefore its mirror image ought to be equally comfortable for left-handers.

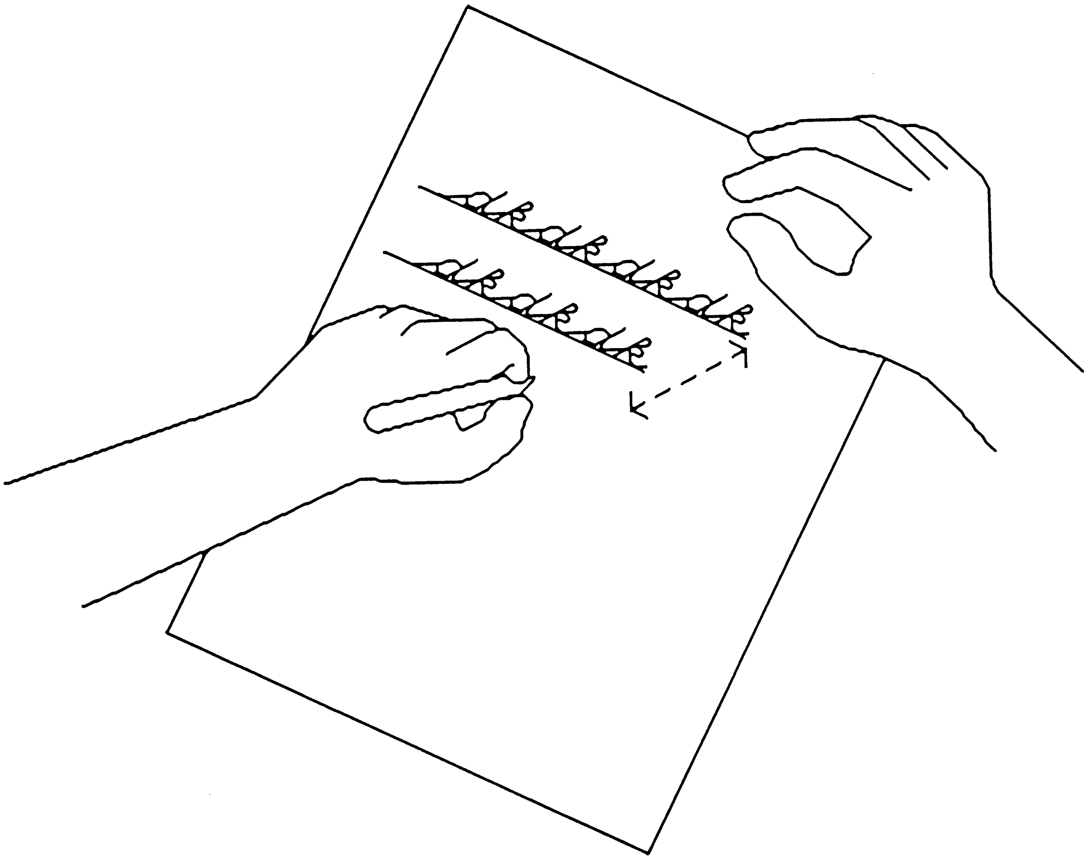

Figure 2: The usual method taught to left-handers.

Her argument, although well-intentioned, is fundamentally incorrect. It fails to account for asymmetries in the relationship between the ideal slant of characters and the musculature of the arm, as elaborated below.

In cursive script, the ideal slant of characters is somewhat to the right of vertical. To achieve this slant comfortably, the most natural orientation of the paper for right-handers is slightly to the left of vertical (Figure 1). With this orientation, *the slant of the characters is perpendicular to the forearm*; this slant can therefore be achieved by an easy rotation at the elbow, holding the upper arm fixed. Most of the work is done with the muscles of the forearm, not the fingers. It has been argued that this technique maximizes accuracy, speed, and uniformity of slant, and minimizes fatigue for right-handers [2,16]. Moreover, writing progresses from left to right in such a way that the hand does not become smeared with ink and the characters just written are visible.

In contrast, with the left-handed orientation of Figure 2, *the slant of the characters is parallel to the forearm*, not perpendicular to it as in Figure 1. It is thus physically impossible to achieve the desired slant by rotation at the elbow, as right-handers do. One would be forced to use either the shoulder or finger muscles to achieve the same slant. Both are unsatisfactory: using the fingers quickly results in fatigue, and using the shoulder gives insufficient control. In addition, the left hand follows the pen instead of preceding it, smearing hand and paper with ink, and blocking the letters just written from view. Thus, the most natural and comfortable orientation for right-handers turns out to be the *least* natural and comfortable for left-handers.

The situation of Figure 2 is so unsatisfactory that it is rarely maintained, and eventually evolves into one of the following methods.

The most common response is probably the technique that Clark calls "the hook" (Figure 3). With this technique, the wrist is bent hard around with the pen pointing toward the writer. The hand is held over the paper and above the line being written. Most of the writing is done with the muscles of the wrist and fingers, resulting in quick fatigue. This position is so common that it is regarded by some teachers as the normal method of left-handed writing [2].

A variation on the hook allows the left-hander to hold the paper vertically or slanted a little to the left. This eases the angle of the wrist somewhat, and may reduce hand fatigue, but the method still depends primarily on the muscles of the wrist and fingers.

The left-hander may also continue with the same paper orientation as Figure 2, but write with a backslant. This allows rotation at the elbow at the expense of attractive script.

All of these methods are unsatisfactory for one reason or another. There is, however, a simple but rather unconventional technique that avoids all the above problems. This technique is illustrated in Figure 4. Clark [2] mentions this technique as one of the incorrect techniques for left-handed writing. However, I believe that this technique is the best of all the methods available to left-handers, for reasons outlined below.

In the method of Figure 4, the paper is oriented *horizontally*, or even rotated a little past the horizontal, with the top of the paper angled down to the right. The most important characteristic of this orientation is that *the character slant is perpendicular to the forearm.* This allows a comfortable rotation at the elbow, as right-handers enjoy with the orientation of Figure 1. Moreover, writing progresses

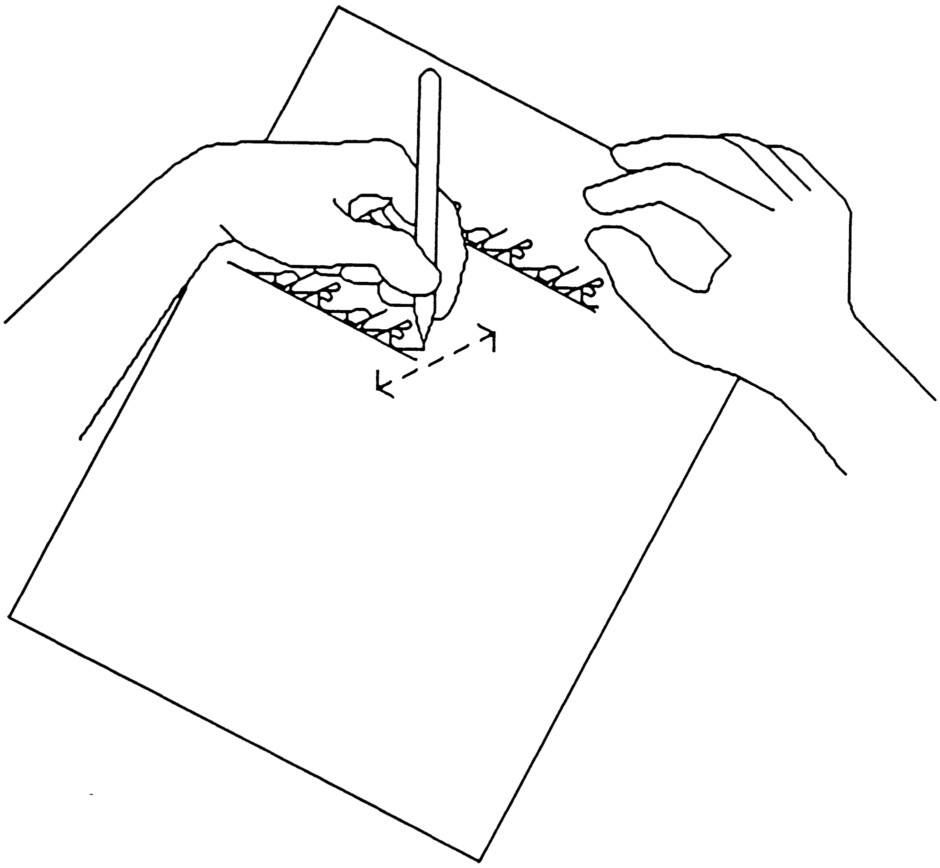

Figure 3: The hook.

from top to bottom, so the hand does not block or smear the letters just written, as it does with the technique of Figure 2. I have used this technique for many years, and have found it quite natural and comfortable. I have also been told that my handwriting looks quite nice (for a southpaw).

Perhaps the reason that this method has not been more widely adopted is that there are two perceived disadvantages. First, the method appears unnatural and uncomfortable because of the unconventional orientation. By far the most frequent comment I receive from people who see me writing is that it *looks* uncomfortable (it is not). Another objection, somewhat less spurious, is that the writer must read vertically while writing. This was perhaps Clark's motivation for rejecting it. I would argue that the human body can much more easily accommodate a slightly

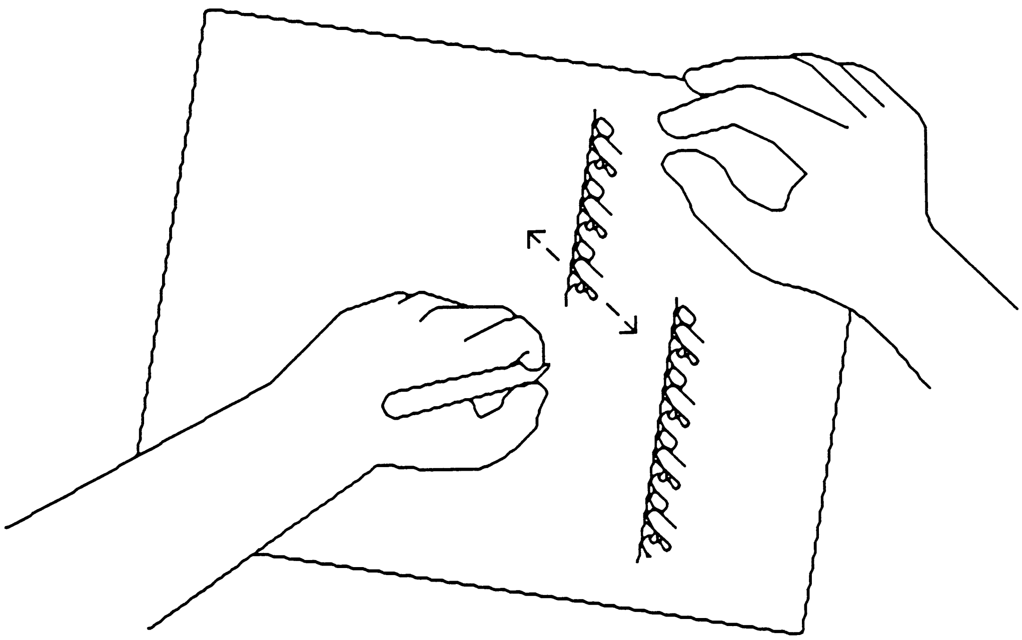

Figure 4: The proposed method for left-handed writing.

unnatural reading angle than a grossly unnatural writing angle.

I distinctly remember my third grade teacher telling all the right-handed children to hold their paper as in Figure 1, and all the left-handed children to hold their paper as in Figure 2. She emphasized to the class that we should use our arm muscles and not our fingers so as to avoid fatigue. Try as I might, I found it impossible. My bewilderment was compounded by the sight of my little right-handed friends experiencing no apparent difficulty. I did not understand why at the time, so I was indeed lucky that when my writing technique necessarily evolved from the method of Figure 2, it evolved into Figure 4 instead of Figure 3. Most of my left-handed friends were not so lucky.

I propose that left-handed children be taught the method of Figure 4 from the outset, so that they might enjoy the same lifelong benefits of attractive script and writing comfort that right-handers have always enjoyed.

References

[1] C. Burt. *The Backward Child.* University of London Press, 1937.

[2] Margaret M. Clark. *Teaching Left-Handed Children.* University of London Press, 1959; second ed., 1974.

[3] L. Cole. *Psychology of Elementary School Subjects.* Farrar and Reinhart, New York, 1934.

[4] L. Cole. "Instruction in Penmanship for the Left-Handed Child," *Elem. School Journal* 39 (1939), 436-438.

[5] Alfred Fairbank. *The Story of Handwriting.* Watson–Guptill, New York, 1970.

[6] W.H. Gardner. *Left-Handed Writing–Instruction Manual.* The Interstate Company, Danville, Ill., 1945.

[7] George M. Gould, M.D. *Righthandedness and Lefthandedness.* J.B. Lippencott, Philadelphia, 1908.

[8] Harnad *et al.*, ed. *Lateralization in the Nervous System.* Academic Press, New York, 1977.

[9] Ralph Haefner. *The Educational Significance of Left-Handedness.* Teacher's College, Columbia University, New York, 1929.

[10] William Leakey. *A Discourse on the Use of the Pen.* C. Ware, London, ca. 1740.

[11] Cloyd N. McAllister, "Researches on Movements Used in Writing," in: *Studies from the Yale University Psychology Lab*, vol. VIII, 1900.

[12] S.T. Orton. *Reading, Writing, and Speech Problems in Children.* Chapman and Hall, London, 1937.

[13] Egbert J. Spadino. *Writing and Laterality Characteristics of Stuttering Children.* Ph.D. Thesis, Columbia University, New York, 1941.

[14] Eugene T. Stromberg and Eleroy L. Stromberg, "Left Handedness as a Factor in Influencing Academic Achievement," *J. Social Psychology* 9 (1938), 335-341.

[15] Mary E. Thompson. *Psychology and Pedagogy of Writing.* Warwick and York, Baltimore, 1911.

[16] R.S. Woodworth, "Accuracy of Voluntary Movement," *Psych. Rev., Mon. Sup.* 3:2, July 1899.

Department of Computer Science
Upson Hall
Cornell University
Ithaca, New York 14853