

PSYCHOLOGY

Why Read From Left to Right?

Tests Given Children Indicate the More Natural Method Is to Begin at the Right Side as in Oriental Languages

By Marjorie Van de Water

WOULD you be able to read this page more easily if it were printed from right to left, or from the top of the page to the bottom—provided of course that you had learned to read in this manner?

In localities where only English is in general use, this may seem like an absurd question, but not all languages use the left-to-right direction of printing. In Honolulu, for example, several languages are spoken and read—and they go in contrary directions. There the question of which direction is more natural is a practical one, and the answer has been sought by Madorah E. Smith of the Territorial Normal School in that city.

When you learned to read English, you formed the habit of reading from the top left corner of the page across to the right, skipping abruptly back to the left to go across the second line, and so on to the bottom only to make another abrupt jump to the top of the next page. You have learned this method so well that it has become automatic with you. You read this way with great ease. So that even when a photograph is described it is "from left to right."

The person who has read only Hebrew, on the contrary, would find it very awkward. For his language is printed from right to left and he has become thoroughly used to that "backward" system.

Those who read ancient Latin followed still another method—they read from left to right on one line and then back from right to left on the next. This method was called "ox-track" writing, because it is like the way the oxen worked back and forth across the field when they pulled a plow.

Here is how a familiar rhyme might look printed in the ancient Latin style:

Twinkle, twinkle little star
era uoy tahw rednow I woH
Up above the world so high
.yks eht ni dnomaid a ekiL

Could you read it? Was it easy? Well, perhaps you didn't need to read it—maybe you remembered it. All right then—see whether

ezingocer uoy naC .ysae sa si siht
?tuo ti lleps uoy od ro, drow eht

Perhaps you would prefer the Chinese method as in the paragraph which follows. Or is it "all Greek"? Try it.

t	d	p	r	a	C
h	o	a	i	t	h
e	w	g	g	i	
	n	e	h	t	n
l		'	t	h	e
e	a			e	s
f	n	r	o		e
t	d	e	f	t	
		a		o	b
	t	d	t	p	e
	o	i	h		g
		n	e	a	i
		g		n	n
				d	s

The method of "running letters down a column is followed to some extent in advertising. Just how much the advertiser sacrifices in legibility for the sake of the novelty of the presentation is one of the facts that may be disclosed as a result of this recent study in the ease of different methods of reading.

If you have found these samples puzzling, imagine the bewilderment of the little six-year-old child in Honolulu who starts to school and immediately is faced with the problem of trying to learn to read two languages—one beginning at the left top of the page and going east, and the other starting at the top right and going south. Naturally the results are chaotic in both languages.

Miss Smith was anxious to find out how these youngsters would prefer to read if they were not forced by necessity to follow the arbitrary conventions of their elders. In a recent report to the Hawaiian Academy of Science, she described tests which she made to uncover the natural inclination of children before attending school and also after they had had instruction in either

Oriental language or English or both. Altogether 740 children from two to nine years of age were tested, and also 112 adults.

The test consisted of "reading" a page of pictures arranged in five rows of five pictures each. The pictures were of objects which would be thoroughly familiar to even the youngest children. They included, for instance, a ball, an apple, a shoe, and a cat. The page was laid down squarely in front of the person tested with no hint of where to begin. They were just told, "Let's see if you can tell what these pictures are."

As the pictures were pointed out and named, a record was kept of the order in which they were "read." The youngest children followed a haphazard scheme, or rather lack of scheme, apparently beginning with the picture which interested them most. There was, however, a slight tendency for them to begin with a picture nearer the right margin than the left and also to start in the lower part of the page.

Apparently children have to be taught



JABBERWOCKY.

Twox pntle and the siltle toues
Did you are and gupple in the waps:
JJA mimm were the porovores
adaptwo etlor smom silt forA

OX-TRACK AND JABBERWOCKY

The ancient Latin inscription, at the top, is written in what was called "ox-track writing" because it goes back and forth across the page as oxen traveled in plowing. Jabberwocky, below, the book which Alice discovered in Through the Looking-Glass, was written like the reversed lines of the old Latin.



to start the page at the top. It is not a natural tendency.

Very young children do not follow any order at all in the pointing out of the pictures. Of the 25 two-year-olds tested, not one followed any clear pattern and only one showed traces of a pattern.

At the age of three, however, some children begin to follow a definite pattern. The plan sometimes follows that used in one of the Oriental or European languages, but often it is one of his own, not used in any written language. For example, 18 per cent. of the three-year-olds used a sort of spiral pattern—they would name the pictures in turn all around the edge of the paper and then travel toward the center.

Difficulty in Giving Tests

The proportion of children following a definite pattern increases steadily with age up to the age of six. That was when the children started to school, and many of them attended two schools—the native school where an Oriental language printed vertically was taught, and the American public school where they were taught to read English in a horizontal direction.

By the age of seven, the children attending only one school would use practically the same reading direction for the pictures as that used in the language they were learning, but those attending both schools failed to develop a definite pattern to the same extent.

Considerable difficulty was encountered in giving the test to adults for the rather amusing reason that it was too simple. It was necessary to explain carefully that there was no catch, and that it was not an intelligence test. The examiner's position was made particularly embarrassing because of the fact that the true purpose of the test could not be divulged until after the results had been obtained. A mere hint that the purpose was to test natural direction of reading would have served to make the subjects self-conscious and the direction followed would be unnatural as a consequence.

Yet it was surely difficult to present the group of simple pictures with a straight face and expect the person tested to solemnly point out which was the book, the doll, the toothbrush.

Finally it was possible to find 112 adults willing to carry through the test in seriousness. Of these, 50 read only English or languages written in a similar direction. Another 50 read both English and some Oriental language.

From the test results of these adults, it was indicated that the habit of reading in a certain direction is more fixed in the person who reads only languages travelling in one direction. Forty-one of those reading only English followed the same direction in reading the pictures; seven followed some other horizontal direction, and only two used a vertical direction.

On the other hand, of the 50 who read both Oriental and European languages only 19 named the pictures in the English direction. Ten used the back-and-forward method of ancient Latin. All the others used some vertical direction.

Miss Smith was anxious also to test adults who read only some Oriental language, but only ten were found who would submit to the test.

One of the ten Orientals read the test in the English direction, two followed the Hebrew direction from right to left horizontally, but the rest all preferred some vertical direction.

Two illiterates who were tested read, one in the Hebrew direction and one in inverted Old-Latin direction.

The results among both the English readers and the Orientals were probably affected by two factors—English-speaking people have a considerable amount of practice in reading up and down because nearly always figures are read in this manner. We add up a column, or down, or up one line of digits and down the next. On the other hand, the Oriental has practice in reading in the horizontal direction, because the comic strip in the Japanese paper is printed horizontally.

Beginning at Bottom

"The tendency of the youngest children to begin at the right would seem to show that the starting point of Oriental languages is more natural in that they too begin at the right hand," Miss Smith concludes. "But the children showed an even more marked tendency to begin at the bottom, which Oriental languages do not do. The preference of the children who could not read for the horizontal as opposed to the vertical direction may possibly indicate that that direction is the more natural; but they show frequently an order of their own, the spiral, and a preference for reversing direction on alternate lines as is found in ancient Latin."

The teachers in Honolulu are not the only ones who have to deal with the problem of the child who insists upon reading and writing in the wrong di-



DOUBLE "BACKWARDS"

A page from a Chinese primer, in which the reading matter starts at the upper right and goes down.

rection. Anyone who has had to teach many left-handed children, or children who have not become fixed in either left- or right-hand habits, has met with the youngster who persists in writing backwards in such a way that the result is decipherable only with the use of a mirror.

The tendency is known to scientists as "strophosymbolia" or twisted symbols. Mirror-writing is the natural method of writing with the left hand, because movements away from the center of the body are easier than those toward it. Persons with strophosymbolia find mirror-writing much easier than does the normal person, and quite often will write more easily in this manner than in the forward direction.

It is not merely a matter of the ease of writing from right to left that makes these individuals reverse their script. Many, in fact, do not learn to write at all, simply because it is so difficult for them to think of forms in the left-to-right direction. Errors in reading are made also. "Rat" is read as "tar," "era" as "are," "but" as "tub," "emit" as "time," "ton" as "not," "gum" as "mug," and so on. For such unfortunate only "reversible" words, like "winnow," "level" and "madam" are easily readable.

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