

Tests and studies indicate that left-handedness need not and should not be considered an undesirable trait

by Robert J. Trotter

If you are left-handed you are discriminated against and at a definite disadvantage. Musical instruments, gum wrapper tabs, Polaroid cameras, golf clubs, scissors, can openers, power saws, playing cards and one-armed bandits are all designed to favor right-handed persons. Since Biblical times, at least, the left-handed minority have been looked down upon. In the *Book of Judges* left handedness is associated with warlike tendencies. The Israelites were twice defeated by a Benjamite army of "700 chosen men left-handed." And in many cultures around the world the words for "left" or "left-handed" have negative connotations. *Gauche* is French for "left" but it also means "awkward." *Mancino* is the Italian word for "left" or "deceitful." *Nolevo* is Russian for "left" or "doing it the sneaky way." And the English language is no exception. Who ever heard of "doing something the left way," or "a bill of lefts" or "stand up for your lefts"? Some etymologists have even suggested that the word "right" developed from the fact that the right was the hand most children were taught to "write" with. But the real clincher is the word "sinister." Almost everyone knows that "sinister" means wrong, dishonest, corrupt, disastrous or evil. According to Webster, however, the first definition of "sinister" is "on or

toward the left hand." And a sinistral is a "left-handed person."

In a paper titled "The Sinister Child," psychologist Theodore H. Blau of Tampa, Fla., explores the realities of being left-handed and reports on a test he has developed for determining handedness. Blau presented his findings at the recent meeting of the American Psychological Association.

Almost 20 years ago, in the process of seeing 200 to 300 children a year brought in for psychological evaluation, Blau noticed that more than the expected number of children he was seeing were left-handed or showed some signs of left-handedness. Estimates of left-handedness range from 6 to 11 percent in the general population. About 16 percent of Blau's patients were left-handed. After observing and testing such children for years, Blau came up with some hypothetical conclusions about left-handedness that in some ways support the sinister stereotype. Among Blau's hypotheses about children who show left-handedness or mixed-handedness are:

- Left-handed children are more likely to be reported as having significant physical and behavioral problems during the first five years of life than are right-handed children.
- They are more likely to have pre-school adjustment problems and first-

grade achievement problems.

- They are more likely to have reading, arithmetic and speech problems.
- They have a tendency to prefer swimming under water more than right-handed children do.
- Their intellectual performance is likely to be more variable.
- The age at which bedwetting stops is likely to be later among mixed- or left-handed children.
- Left-handed children are likelier to show certain socially unacceptable behavioral traits, including stubbornness, difficulty in completing projects, difficulty in following directions, impulsivity, a tendency to be socially embarrassing to the family, a penchant for creating war within the family, difficulty in learning from experience and oversensitivity.
- Left-handed children are more likely to show symptoms of poor sleep, headaches and dizziness.
- Left-handed children are more likely to be imaginative and creative.

Do such conclusions really apply to left-handed children? To test his hypotheses, Blau, a clinical psychologist, called in Richard Jaeger, a specialist in research design and statistics at the University of South Florida. To do competent research on complex human problems, Blau believes a professional psychologist who deals with people

needs to join forces with a research scientist who deals with data. The first thing Blau and Jaeger did was review the research literature on handedness or laterality.

It all starts in the brain. A great deal of evidence has concluded that handedness, footedness and eyedness are related to domination by one lobe of the brain or the other. Right-handedness is usually the result of left-hemisphere domination in which the left side of the brain controls the right side of the body (including the right hemisphere). Left-handedness, however, is not considered to be strictly related to right-hemisphere domination. In humans, complete right-hemisphere dominance is thought to be extremely rare. So left handedness is believed to be the result of mixed cerebral dominance where neither the left nor the right hemisphere has complete control of the body. Mixed cerebral dominance helps to explain some of the left-handed traits that Blau has described.

Many left-handed children, for instance, are bedwetters well past the age of three. The bladder can respond to one of two electrical messages from the brain—open or close. In right handers the left hemisphere is dominant and the bladder receives and acts on messages from the left hemisphere. If there is mixed dominance, suggests Blau, the bladder may be getting messages from both hemispheres of the brain. The messages may start out the same, but when they cross on the way to the bladder they are reversed. A mixed-dominance or left-handed child, therefore, may receive two opposing signals—open and close. But the bladder can respond to only one message at a time. The result may be confusion and bedwetting. Such confusion could explain the difficulty some left-handed children have learning bladder control. But Blau admits that not enough research has been done to completely support this theory.

Bedwetting may be considered a somewhat sinister trait, but lefties do have certain advantages. English cars, typewriters, tennis and baseball all favor (at least in some ways) the left-handed person. Left handers also tend to be better than right handers at underwater diving, and this may be due to mixed-cerebral dominance. "I am a professional underwater diver," explains Blau, "and we have always known that left-handed divers accommodate to underwater visual distortion much more rapidly than do right-handed divers."

This casual observation was confirmed with good experimental data last year. Salvador Luria and a group of researchers reported that left-handed divers unquestionably adapt to visual distortion better than right-handed divers. The reason is that visual percep-

tion receptors are much more abundant in the right hemisphere. Left-handed people, with some right-hemisphere dominance, have an advantage and can use these receptors to discriminate, adjust and compensate underwater.

The advantages of mixed dominance are not restricted to sports. Left-handed people sometimes tend to be more creative than right-handed people. Artists have demonstrated much left-handedness or left orientation in their work and left-handed musicians have been found to be more holistic than right handers in their perception of music. The right hemisphere may be responsible for this. The left hemisphere usually controls speech and verbal thought while the right hemisphere is thought to be more concerned with spatial imagery and holistic rather than linear perception. While the left hemisphere is busy with verbal and linear thought, the right hemisphere is free to dream and be creative. Some researchers believe that Zen and other Eastern meditation practices and even some types of drug taking are attempts to get in touch with the creative right hemisphere. And attempts are being made to increase creativity by teaching people to exercise the right hemisphere—a form of exercise at which left handers have a head start.

Even if the right hemisphere may have certain talents, left-handedness still carries with it a social stigma that may be responsible for some of the so-called sinister traits sometimes seen in left-handed children. One point on which Freudians and behaviorists agree is the importance of early life experiences. And left-handed children are subjected to a special set of experiences. The Romans developed the right-handed handshake, the right-handed salute and the word "sinister." Ever since, and probably even before the time of the Romans, society has worked against left-handed children. The constant pressure on a left-handed child to do what doesn't come naturally (use the right hand to write, eat, etc.) can

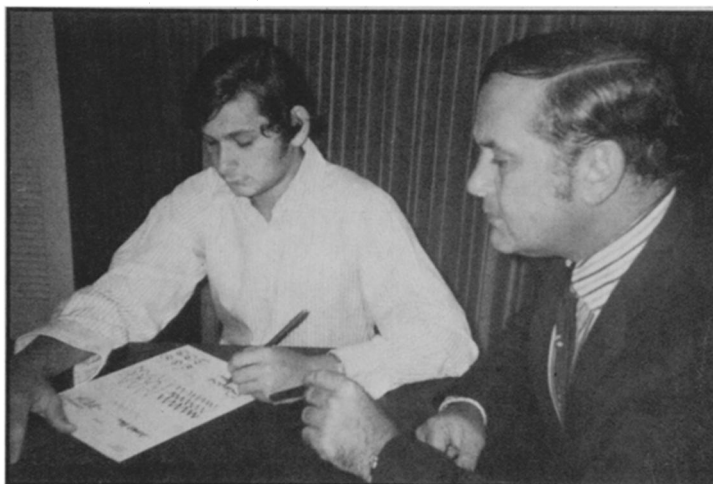
possibly explain some of the behavioral problems of left-handed children. A child who overcomes the pressures of society, for instance, and persists in left handedness may indeed develop a streak of stubbornness or an inclination to go against group pressure and accepted norms.

"I suspect," says Blau, "that it's not one experience but a long series of experiences where the left-handed person begins to learn very early in life that the word right has a double meaning. It has a positional meaning and it has a moral meaning." And as a left-handed child matures, the effects of early training may persist. "Later on in life," says Blau, "this stubbornness may become a forthrightness or a willingness to go it alone in spite of other peoples' objections—as we have seen in Presidents Ford and Truman, our two left-handed presidents. Who would have thought that easy-going Truman would have dropped the bomb or that President Ford would have pardoned Mr. Nixon so soon?"

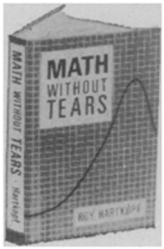
With all of this information about left-handedness, what can or should be done about the left-handed child? First of all, it is necessary to find out who is truly left-handed. Laterality or cerebral dominance is evident very early in life. D. H. Crowell, for instance, has been able to detect brain-hemisphere preference during the first week of life by monitoring cortical activity. Studies of identical twins raised in separate homes suggest that handedness is a genetic rather than a learned trait. In either case, hand preference is usually determined by the age of five. But hand preference, says Blau, is not a true test of what is going on in the brain. Many people with mixed dominance may have been trained or forced into right handedness. Blau has developed a simple test of handedness that he says is a more accurate judge of cerebral dominance.

The test consists of a form on which a child is asked to copy a simple design and to draw some X's and circle

Blau administers the torque test to his left-handed son. The test might lead to an understanding of the problems of some children.



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them. The child is also asked to sign the form. The procedure is repeated with both hands. The strength and control shown in the handwriting tasks is an indicator of preferred hand, but the drawing of circles has turned out to be the true test of cerebral dominance. In a test of 463 children (ages 4 to 17), Blau found that left-handed children tended to draw circles clockwise and right-handed children consistently draw them counter-clockwise. This tendency seemed to apply whether the right or left hand was used. Blau calls this seemingly consistent circling phenomenon "torque." The test is now called the torque test.

Of the 463 children tested, 16 percent showed left-hand preference or the ability to use both hands. The torque test indicated that as many as 27 percent of the entire sample actually had some mixed dominance—they made at least some of the circles with a clockwise torque. Observation, psychological tests, interviews and parental interviews were then used to test Blau's hypotheses about mixed-dominance children. The findings and relationship to the torque test were significant. Most of the left-handed or mixed-dominance children had a history of the traits that Blau had predicted—bedwetting, underwater swimming, physical and psychological problems, creativity, etc.

Blau admits that all of the children tested so far have been brought in for psychological evaluation. In other words, they are not a completely normal group. But, he says, if left-handed children stand out predictably in this group, they will stand out even more clearly in a group of normal children and in the population at large. Studies to determine if this is so are under way.

Many questions remain to be answered about handedness, but one of the most important has to do with child-rearing practices. Blau suggests strongly that left-handed children should be accepted as normal. They should not be treated as if they were unusual, and they should not be forced into the right-handed system. Creativity in mixed-dominance children should be fostered—perhaps in special educational settings that encourage freedom—and left-handed children should be given continual reassurance to help them cope with the disadvantages imposed by a right-handed society.

And finally, says Blau, the parents of left-handed children should be reassured. Their children are not sinister, evil or different. In fact, they are following in the tradition of left handers like Alexander the Great, Babe Ruth, Hans Holbein, Charlemagne, Picasso, Lord Nelson, one half of the Beatles (Paul and Ringo), Michaelangelo and Leonardo Da Vinci. □