The sinister handed

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I've always wondered what it must be like to be left-handed in a right-handed world. My father, an engineer, would draw with his left hand and write the description with his right simultaneously, much to my amusement as a child. The rector who married us and two of the surgeons I have trained were lefties. All have told me of the struggles they have had, particularly during their school years. Frank Wilson, the neurologist author of the recent book *The Hand*, reports that his father wrote with his right hand but threw with his left. Dr. Wilson was a left-hander by birth, converted to a right-handed writer in school. His writing was completely illegible, but people always assured him this was the sign of a real doctor (1).

In classical Greece the word *arisera* had two meanings, fine or best as in aristocrat but also left-handed. Using the word *sinister* for left is of later origin (2). Sinister derives from *sinus* or pocket side since the Roman toga always had the pocket on the left. Old English used the words *left* or *left* with a primary meaning of weak or worthless; in Middle English *left* survived as an indication of side. Gradually the terms *left*, *left hand*, and *left-handed* developed derogatory meanings, and even in *Roget's Thesaurus* the word *unskilled* has left-handed, equivocal, and sinister as synonyms (3).

The word *left* still has negative connotations. Recently a group of college freshmen and sophomores were asked their subjective feelings about the words *left* and *right*. *Left* was represented by bad, dark, profane, female, night, west, unclean, curved, limp, homosexual, weak, mysterious, low, ugly, incorrect, death. *Right* was thought to be good, right, saved, male, clean, day, east, straight, erect, strong, heterosexual, commonplace, high, beautiful, correct, life (4).

It has been estimated that there are 100 to 200 million left-handers in this world (5). Most generalizations on handedness allot a proportion of 8:1 or 9:1 for right-handedness over left-handedness, with men showing a slightly higher rate of left-handedness (6). There is a spectrum from strongly right-handed through bilateral ability to strongly left-handed. The word *ambidextrous* actually means 2 right hands (7).

In the Stone Age, or Neolithic times, tools were made of stone or natural objects such as wood, bone, or antlers. In the Bronze Age (4000 bc), man learned to smelt and alloy copper with tin. Around 2000 bc, man discovered how to make iron. Throughout these thousands of
years, archeological evidence shows that people had no preference for right or left. However, during the late Bronze Age a significant increase in right-handedness is shown in the tools, and this trend increased during the Iron Age. About one third of aboriginal North American Indians seemed to have been left-handed or at least bimanual (8). The Incas thought that to be left-handed was lucky, and one of their great chiefs was Lloque Yupan Qui, which translates as left-handed (9). Certainly the modern human is predominantly right-handed.

The complete concordance of the Bible has more than 1600 references to the hand, most of which are in praise, or at least approval, of the right hand. The psalms contain over 25 favorable references to the right hand. Similar sentiments can be found in both the Torah and Koran (10).

In Matthew 6, we are cautioned, “Let not thy left hand know what the right hand doeth,” and in Matthew 25, “He shall sit the sheep on his right, but the goats on the left. . . . Then he shall say also unto them on the left hand, Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels.”

It is only in Judges (chapter 3) that one finds any real approval of the left hand. The Benjamites, whose name is derived from Ben Yamin, which means son of the right hand, had a number of left-handed warriors whose deeds are recorded. When fighting the Israelites, the 26,000 Benjamites had among them 700 left-handers, every one of whom “could sling stones at a hair breadth and not miss.” They must have been very accurate since in the first battle this “Tribe of the Hand” slew 22,000 Israelites (11).

No doubt these many legends in the Bible can be subjected to various translations, but I personally take exception to a recently issued translation of the Bible which, in the spirit of political correctness, no longer states that Christ sits at the right hand of God (Mark 16:19) but that he sits at the mighty hand of God—thereby keeping the left-handed from being slighted!

The left hand is much maligned in myths and legends. In early times it was thought that man was right-handed because during prayer he faced east and therefore the sun was on his right; unfortunately this does not apply in the Southern Hemisphere (12). An equally superstitious belief is carried out to this day when one throws spilt salt over the left shoulder to placate the evil devils that always lurk behind and to the left (9).

In medieval times the left hand was associated with the Black Arts, wizards, and sorcery. In witchcraft, evil spells are cast by laying on the left hand, and a left-handed oath is never to be trusted. This belief causes trouble for left-handers today when swearing on a Bible in court or when taking the oath on military induction. Left-handers not unreasonably raise their dominant hand, much to the wrath of bailiffs and sergeant-majors. Even in today's marriages the wedding band is placed on the ring, or third, finger of the left hand since this is the “charm finger” of superstition, and a precious metal ring on this finger will enhance the power to ward off black magic (13).
There seems to be no good answer as to why people are left-handed. Logic would seem to dictate that the cause lies in the genes, yet simple genetics does not explain why left-handers are born in completely right-handed families. To cover this problem, “partial penetrance” is invoked. Whatever the explanation, it is a fact that many studies show a much higher incidence of left-handedness in identical twins than in normal births (14). The percentage of left-handed children born to 2 right-handed parents is 2%; to 1 right-handed and 1 left-handed parent, 17%; and to 2 left-handed parents, 50%. Studies of adopted children suggest that genetics rather than environmental factors is responsible for hand preference.

A rival school of thought blames left-handedness on “birth stress factors.” Psychologists at the University of Vancouver studied 1398 subjects and confirmed to their satisfaction an association between birth stress and left-handedness (15). They found that left-handed mothers are more likely to have birth-stressed offspring. This, they suggest, could be a plausible alternative to the genetic explanation. The Canadian psychologist Bakan believes that a reduced oxygen flow to the left hemisphere is the culprit; unfortunately, no brain damage has ever been demonstrated (16).

The sinister handed will no doubt be startled to know that professor of psychiatry Abram Blau opined that “sinistrality is thus nothing more than an expression of infantile negativism and falls into the same category as contrariness in feeding and elimination, retardation in speech, and general perverseness in so far as the infant with meager outlets can express it” (17). In his book *The Master Hand* (1945), he wrote, “We're right-handed because we are left brained,” but French sociologist Robert Hertz in his book *Death and the Right-Hand* (1960) proposed, “We are left brained because we are right-handed” (18). Neither Plato nor Hertz believed that one hand is inherently superior to the other. However, throughout Hertz's anthropological studies, he found the left is the hand of “perjury, treachery and fraud.”

About 60 years ago the American psychoanalyst Hendricks described the sinistral personality: “He is over meticulous in dress and social manner, devotes an excessive care to the collection of useless articles, is either brutal or coldly aloof, accepts and enforces a very rigid moral code, is often secretly superstitious and openly very obstinate, is with great difficulty diverted from a rigid course of sternly intellectual thought, constantly experiences the greatest difficulty in making decisions” (19). Left-handed artist James DeKay describes his peers as having “a maddening habit of thinking in ellipses rather than straight lines. A train of thought apt to meander through the whole alphabet on the way from A to B. An unmistakable offbeat demeanor in which a certain frowziness may be involved, a vagrant cowlick, a missing button, an unfocused gaze . . .” (20). However, others view the sinister personality more favorably. In 1969, neurosurgeon Joseph Bogan stated that “right-handers are a bunch of chocolate soldiers. If you've seen one you've seen them all. But left-handers are something else again” (21).

Whatever their personality quirks, it is significant that left-handers are twice as likely to qualify for membership in Mensa, and when NASA needed imaginative, reliable, multitalented astronauts to explore the moon, it turned out that 1 out of every 4 of the
Apollo astronauts was left-handed, which is 250% greater than statistical probability (9).

Children do not understand the difference between left or right until they are about 6 years old. However, a baby at its seventh month of life begins to favor one or the other hand. Until that age they are bimanual (22). Tabori points out that there are no perfectly “ambidextrous” people in the world. No matter what they may claim, they always have a bias for one hand or the other (23). The right and left hands are not mirror images of each other and have different functions and tasks. In general, the dominant hand is responsible for fine-precision manipulations, and the nondominant is responsible for holding or steadying. Ludwig showed that when people clap their hands, most will cup their nondominant hand and strike it with their dominant hand (24).

Certain tests may disclose whether an individual has a tendency to left-handedness. In the 1974 New England Journal of Medicine, Dr. J. E. Block from Missouri claimed that when comparing the dorsal views of both thumbs placed side by side, the dominant thumb base will have a wider and squarer-shaped cuticle (25). I have made casts of the hands of all recent left-handed presidents, and unfortunately for the Block Test none are positive. In the Torque Test of Theodore H. Blau, children are asked to draw some Xs, circle them, and sign their names with each hand. It is said that right-handers draw circles counterclockwise and left-handers draw them clockwise (26).

Br?ning and Kaeppel believe that their test helps to demonstrate the dominant hand, particularly in the bimanual. The individual is asked to turn both hands, with palms down, in the same direction, making circles at an increasing speed. The nondominant hand will eventually change to a counterclockwise direction (27).

Forcible conversion of handedness produces what psychologists call a “misplaced sinister,” and these unhappy people have miserable childhoods. The Reverend Charles Lutwidge Dodgson, a professor of mathematics at Oxford University and author of the Alice in Wonderland stories, stammered; he was also left-handed. During World War II, King George VI of England made radio addresses to his nation in a characteristic slow and deliberate style of speech—a style forced on him because he had developed a stammer between ages 7 and 8. His father, King George V, was an intimidating, stern man and insisted that he write right-handed even though it was obvious he was a dominant left-hander. In adult life he was an excellent athlete and played left-handed golf and tennis to championship standards. The personal secretary to King George VI, Sir John Wheeler-Bennett, was also left-handed and recorded how the teasing by right-handed children and the sense of being different from others produced “bitter humiliations, infuriating inhibitions and frustrations and orgies of self pity” (28). Hopefully such misplaced zeal has now disappeared from our school systems, particularly since it is recorded that a left-handed child’s stammer immediately stops if forced right-handed writing is abandoned.

Ben Franklin had a miserable left-handed childhood and as an adult wrote “A petition to those who have the Superintendency of Education” in which he recorded, “If by chance I touched a pencil, a pen, or a needle I was bitterly rebuked; and more than once I have been beaten for being awkward and wanting a graceful manner.” He ended his epistle by signing
it, “I am with profound respect, Sirs, your obedient servant. THE LEFT HAND” (29).

The literature shows that a variety of disciplines have examined the relationship of left-handedness to health conditions such as allergies, auditory hallucinations, autoimmune disease, birth complications and prematurity, cancer, childhood behavioral abnormalities, childhood cognitive disorders, circulatory disease, coronary disease, Crohn's disease, dyslexia, eczema, epilepsy in parents, head trauma, hormonal imbalances, immune disorders, learning disorders, migraines and tension headaches, myasthenia gravis, psychoses, reproductive problems, rotational fractures of the tibia, stammering and stuttering, stress-related problems, twinning, and ulcerative colitis, as well as injuries and accidents and factors such as alcohol consumption, cigarette smoking, homosexuality, and criminality.

A number of reports in the lay press have suggested that left-handers are prone to die earlier than right-handers. Some have said this is reasonable because left-handedness has been linked to 3 leading causes of death in our society: alcoholism, smoking, and breast cancer. It seems that these links are weak at best. However, left-handed and even “ambidextrous” women can breathe easily because in the Iowa Women's Health Study 5-year mortality follow-up of nearly 40,000 women aged 55 to 69, left-handed women had no increase in mortality risk compared with right-handed or “ambidextrous” women (30). In patients with breast cancer in Sweden, left-handedness is significantly less common (1.5%) than in the general female population (5%) (31). In the USA a study of 8801 hospitalized patients showed that the rate of left-handedness was significantly lower in breast cancer patients (32).

The same study showed that in men left-handedness was not associated with high levels of alcohol consumption but was associated with an increased rate of fractures. Rotational fractures of the tibia occur more commonly in the left tibia of left-handed individuals than in their right. This appears to be related to the fact that right-handers have a predilection for counterclockwise turning of the body and left-handers for clockwise turning. The increased risk “seems to be associated with rotation deviations from the normal mechanisms of posture control and motor performance that are required in attempts to parry a fall” (33).

Early deaths were studied in nearly 50,000 Swedish military conscripts aged 18 to 21 inducted in 1969 to 1970 and followed through 1989. Nine hundred and fifty-four people died in this cohort, of whom 82 were left-handed. This corresponds to a relative risk rate of 1.0 for left-handers compared with right-handers. The relative risk rate of death by motor vehicle was 1.3. Thus, there may be a slightly increased relative risk for left-handed drivers (34). A report from Canada studying patients with traumatic brain injuries showed an increased prevalence of left-handers, particularly those involved in motor vehicle accidents (35).

In 4081 Scottish schoolgirls, the left-handed were 32% more likely to be injured than their right-handed peers, but the corresponding relative risk for boys was not significant. A study of left-handed adolescents showed that they had consulted a physician for injuries of the left hand rather than the right hand. More left-handers than right-handers had been hospitalized
for injuries, and more left-handers had needed surgery (36).

In another study of nearly 10,000 adolescents and young adults, there was no overall association between injury and handedness except that before school age, left-handedness was associated with an increased injury rate. The authors concluded that their data did not suggest that left-handedness is a risk factor for accident occurrence (37). This was confirmed in a 1947 study of 225,000 Michigan school children, in which 10.1% of first graders were left-handed but only 6.6% of 12th graders were (38).

In a 1995 study in the *Journal of Hand Surgery* relating hand dominance to major hand injury, 125 patients with digital amputations were contrasted with 116 patients treated for minor hand injuries. Left-handed individuals had 49 times greater relative risk of an amputation than right-handers. Minor hand injuries occurred at a rate proportional to the distribution of left-handedness in the general population (39).

For a left-hander, eating a meal at a counter can be hazardous; he tends to put his elbow into his left-sided neighbor's soup or sandwich—that is, if he can find his correct instruments because they will have been laid with his knife and glass of water to his right. Equally, a left-handed violinist, like Charlie Chaplin, will not only have to have a left-handed strung violin but would have to sit at the left end of the strings to avoid hitting his string mates.

Left-handed surgeons need special left-handed scissors, as do hairdressers. Most items for manual use are manufactured for right-handers, including corkscrews and door handles (most doors open to the left). Rifle butts and the inside rifling are spiraled to the left to balance the right-handed pull of the average person (40). Garden secateurs, scythes, and sickles are not usually available for the sinister handed. Men's double-breasted suits are made for right-handers; watch a left-hander trying to button up the inside button!

Shopkeepers know that people usually turn right when entering a store, and the “specials” are placed on the right of the entrance. Lefties automatically turn left and maybe thus avoid temptation. There are now some shops and catalogs that specialize in serving the sinistrals. When in Sydney, Australia, I found in the Rocks area of the harbor a large shop that sold only left-handed items and bought a left-handed tie, which ties just as easily right-handed. The shop even offered left-handed potato peelers.

In present-day society, the advantages of being left-handed are few indeed. One definite advantage is in aiming coins into the tollbooth basket. If you are musical and play the piano, Benjamin Britten, Prokofiev, and Ravel have each written you a concerto for your left hand. The latter wrote it, he said, “not so much to show what the left hand can do, but to prove what can be done for the appendage that suffers from sinistral stigma.” If you favor wind instruments, give up on the saxophone but try the French horn, a challenging instrument, but one keyed for the left hand (41). Jack Fincher maintains that the typewriter favors a left-hander (42). No doubt this is because the vowels are on the left half of the QWERTY keyboard both in typewriters and computer keyboards. Lefties might make good helicopter pilots since they sit on the right side of the cockpit—which leads to the question, “How do left-handed pilots of fixed-wing aircraft manage when they have to sit on the left side of the
cockpit?” I checked with a pilot friend who trains pilots for a major airline, and she assured me that left-handers are not a problem in training, and in fact they are good at steering the aircraft into the gate since the steering gear is on the left of the cockpit. Right-handed helicopter pilots do just as well as lefties.

Many athletes are left-handed. Ben Hogan was left-handed but played golf right-handed because he was told to put his greater strength into his leading arm; he always regretted changing sides. Competitive swimmers who are left-handed are said to benefit from an ability to adjust more readily to underwater vision. Maybe this helped Mark Spitz win 7 Olympic gold medals in 1 meet. No doubt for some good reasons left-handed polo playing is forbidden.

One occupation in which it is an advantage to be left-handed is baseball. A lefty pitcher, such as Steve Carlton, can monitor first base during his windup and shorten a runner's lead. Left-handed pitchers are called southpaws because in the old West Side Chicago ballpark, their left arms would be on the south side since they were facing west. Boxing later appropriated the term for left-handed punchers. There are no left-handed catchers, but if there were they could throw to second base very rapidly. A left-handed batter is facing first base at the end of his swing and can readily start his run to base. The left-handed first baseman can easily throw to second base on a double play and with his gloved right hand can cover a lot of the infield. It is said that about 30% of professional pitchers and batters are left-handed, and nearly 50% of first basemen are lefties (43). Left-handed tennis players usually represent about 40% of the professional ranks at any one time. Recent notables have been Jimmy Connors, Rod Laver, John McEnroe, Martina Navratilova, and Guillermo Vilas.

Left-handers seem to be one of the few minorities in our society with virtually no feel for common identity, no collective power or goals, and little or no organization. They do at least have a “day”—August 13, the International Left-handers Day, which was proclaimed on August 13, 1976, by the now deceased Left-handers International. Several other clubs have blossomed but withered on the vine. It is said that there now exists an Association for the Protection of the Rights of Left-handers, but I am not clear what “rights” they have, although they are said to be campaigning for allowable use of the left hand in taking oaths and saluting.

A struggling League of Left-handers may still exist (123 members in 1977) but pales in comparison with the Japanese Left-handers League which, founded by a psychiatrist, has attracted 1500 members out of that nation’s 5 million left-handers (44).

Many publications list numerous lefties in a variety of occupations; in any random group of about 100, nearly 50% will be entertainers of some sort. It is said that the right-handed deal well with abstractions such as mathematics and that the left-handed translate everything into visual imagery, and this explains why so many creative people have been lefties and why they tend to dominate show business (45).

In his book Lefties, Jack Fincher (46) enumerates more than 50 entertainers and a slightly
smaller number of prominent lefties “who were not entertainers.” From all these I have
selected a few who intrigue me: Alexander the Great, Napoleon Bonaparte, Julius Caesar,
Charlemagne, Prince Charles, Clarence Darrow, Richard Dreyfus, Albert Einstein, Queen
Mother Elizabeth, Marty Engles, Peter Fonda, Judy Garland, Lou Gehrig, Uri Geller, King
George VI, Betty Grable, Rex Harrison, Ben Hogan, Danny Kaye, Sandy Koufax, Cloris
Leachman, Marcel Marceau, Harpo Marx, Paul McCartney, Marilyn Monroe, Edward R.
Murrow, Stan Musial, Lord Nelson, Arnold Palmer, Ross Perot, Cole Porter, Robert
Redford, Nelson Rockefeller, Ringo Starr, Emperor Tiberius, Tiny Tim, Queen Victoria,
and Henry Wallace.

There are not many left-handed artists, but several are world famous: Milton Caniff, Escher,
Hans Holbein, Paul Klee, Leonardo da Vinci, Bill Mauldin, Michelangelo, Pablo Picasso,
Raphael, and Ronald Searle.

Among our left-handed presidents are George Bush, William Clinton, Gerald Ford, James
Garfield, Herbert Hoover, and Harry Truman. Ronald Reagan should also be considered,
since he was forcibly converted from left to right in childhood. Gerald Ford is an odd lefty
because he is left-handed only when sitting down; he plays golf, writes on a blackboard, and
throws a ball right-handed (9).

Joan of Arc was left-handed despite the fact that many drawings show her holding her
sword in her right hand. The Scottish Kerr family are renowned for producing many left-
handed progeny—so many in fact that they built their castles with left-handed spiral
staircases so they could more easily defend them (9).

Occasionally prominent criminals are left-handed, such as Billy the Kid and the Boston
Strangler. Jack the Ripper practiced his mutilations in Whitechapel, London, adjacent to the
Royal London Hospital where I trained. The knife wounds were clearly made by a left-
hander, and as the number of victims increased, it is recorded that attendance in the
gynecological outpatient clinic at the hospital dropped precipitously. No staff member of the
hospital was ever accused, and it is now thought that the perpetrator was the Duke of
Clarence, Queen Victoria's grandson.

Do not despair, you sinister handed. You're obviously very smart. You've had “bad press”
for centuries, but don't let it get you down. You could retire to the little town of Left Hand,
West Virginia, which even has its own ZIP code, 25251. James DeKay dedicated a book to
its citizens, who he postulated were all left-handers. Not so, unfortunately; this small town
got its name by growing up on the left fork of the 3-forked Seeder River only a few miles
from the adjacent larger town of Looneyville.

Take courage from Ben Franklin. He had a miserable left-handed childhood but became a
philosopher, statesman, author, and inventor. One of his best ideas was to combine a chair
with a cradle and make that most comforting piece of furniture, the rocking chair. Sit in
your rocking chair and realize it probably won't be long before some hungry left-handed
lawyer brings a class-action suit under the Americans with Disabilities Act!
References


22. Tabori: 147.

23. Tabori: 147.


42. Fincher: 21.
44. Fincher: 22.

Author's note: For many years I have kept a file on left-handedness. Included are newspaper articles, tear outs from journals, and extracts from books. I have tried to acknowledge all these sources but should I have inadvertently not correctly attributed some apt phrase or sentence, such plagiarism is unintentional, and I sincerely apologize.