

Directions:

1. Mark your confusion.
2. Show evidence of a close reading. Mark up the text with questions and/or comments.
3. Write a one-page reflection on your own sheet of paper.

**On the Left Hand, There Are No Easy Answers**

Source: PERRI KLASS, M.D./New York Times, March 6, 2011

Humans are asymmetric animals. Early in our embryonic development, organs turn to one side or the other — heart to the left, liver to the right and so on.

In rare cases, an organ may turn up on the “wrong” side with no untoward effects. (I once examined a child with dextrocardia, or heart on the right.) But there is one form of asymmetry that is common and, until quite recently, stigmatized: handedness.

Over the centuries, left-handers have been accused of criminality and dealings with the devil, and children have been subjected to “re-education.” In recent years the stigma has largely vanished; among other things, four of our last five presidents — Reagan, the elder Bush, Clinton, Obama — have been left-handed. (Reagan is sometimes cited as ambidextrous.)

But the riddle of why about 10 percent of children are born with this essentially human asymmetry remains.

“This is really still mysterious,” said Clyde Francks, the lead author of a 2007 study in which Oxford University researchers identified a genetic variant linked to left-handedness.

Hand asymmetry (whether left or right) is related to brain asymmetry. And that, Dr. Francks said, “is not at all understood; we’re really at the very beginning of understanding what makes the brain asymmetrical and what goes wrong — we don’t understand that process in the normal case.”

Handedness clearly runs in families. The 2007 paper by the group at Oxford identified a gene, *LRRTM1*, that they discovered in the course of studying children with dyslexia, and which turned out to be associated with the development of left-handedness.

Dr. Francks, who is now at the Max Planck Institute for Psycholinguistics in the Netherlands, recalls that the discovery made headlines and attracted a great deal of attention, the more so because this gene was also found disproportionately in people with schizophrenia, even though none of these connections are simple or well understood. “We’re not looking for a gene for handedness or a gene for schizophrenia,” he said. “We’re looking for subtle relationships.” The gene affects the ways that neurons communicate with one another, he said, but its mechanisms still need to be studied.

Dr. Daniel Geschwind, a professor of human genetics, neurology and psychiatry at U.C.L.A. School of Medicine, is interested in the connections between language and handedness, and the ways that handedness can help us understand the evolution of the human brain. “Handedness has a genetic basis, but like other complex traits — height, weight — it is complex,” he said. “It’s not a single gene that leads to it. There’s a strong environmental component, too. It’s a very tricky problem.”

As with other traits that we are tempted to classify as either/or, handedness is probably better viewed as a spectrum encompassing the very strongly right-handed or left-handed, and a range of those who prefer to use one hand or the other, but have different degrees of comfort and competency with the nondominant hand.

In general, said Dr. Geschwind, left-handers have less asymmetric brains, with more even distribution over the two hemispheres. “Perhaps a more accurate conceptual way to think about them is as non-right-handers,” he said. “Many of them are much more likely to be ambidextrous and have fine motor abilities with their right hands.”

Because left-handedness has been seen as such an easily measurable “external” trait, and as a key to the complex anatomy of the brain, researchers continue to look for — and debate — links to many other conditions, including immune disorders, learning disabilities and dyslexia, reduced life expectancy and schizophrenia.

In pediatrics, we worry about children who manifest handedness too early, before their first birthday. The concern is that if a very young child seems to strongly prefer one hand, there may actually be some problem — perhaps some kind of neurological damage — on the other side.

Left-handedness has sometimes been treated as pathological. Cesare Lombroso, the infamous 19th-century physician who identified various facial (and racial) features with criminal traits, also saw left-handedness as evidence of pathology, primitivism, savagery and criminality. And I was brought up with the story that a generation ago, in the bad old days (and in the old country), foolish unenlightened people tried to force left-handed children to convert and use their right hands. My father said that my uncle, his older brother, had had his left hand tied behind his back as a child.

A colleague’s husband, Anthony Gentile, who is 41 and grew up outside Cincinnati, told me that though he was always left-handed, he was taught to write with his right hand — but could never learn to hold the pencil correctly. “I can hold the pencil properly in my left hand, but I don’t have the coordination to write,” he told me. “It looks like I’m holding the pencil properly, but I am unable to make any letters.”

The percentage of left-handers in the population seems to be relatively constant, at 10 percent. And this goes back to studies of cave paintings, looking at which hands hunters are using to hold their spears, and to archaeological analyses of ancient artifacts. So though there has been prejudice against left-handers, and though there may be some developmental risks, said Dr. Geschwind, “there clearly must be advantages as well. The reason why it maintains that way, nobody knows what it is.”

Dr. Francks said he was “quite happy with the sentiment of reassuring people that left-handedness is not some weird disability.” But, he added, “There’s no reason to go beyond that and say that left-handers are even more talented.”

So I won’t cite the numbers sometimes quoted about how many architects are left-handed, or how many M.I.T. professors. On the other hand (so to speak), at a moment when we can finally hope for an end to winter, maybe we should celebrate the left-handers whose greatness truly lies in the ways they integrate motor control, strength and the highest kinds of skill and intelligence. Warren Spahn, Sandy Koufax, Whitey Ford, anyone? C. C. Sabathia, Jon Lester, Cliff Lee?

Possible topics for your WN:

- Discuss when and how you use your “off” hand
- What might be some of the advantages and disadvantages of being left-handed?