

Chapter 13: Hypernotes

WWW 13:2

This account is principally based on that of Sadler (1997a). He also points out in the same article that Bart Simpson is shown left-handed most of the time; “He might just be left-handed to fit in with the stereotype that left-handers have a rebellious nature” (p.148).

Whether Henson was left-handed is unclear, at least one web-site saying his left-handedness is a myth, albeit one that is often quoted (http://www.qsulis.demon.co.uk/Website_Louise_Gold/The_Muppet_Show.htm).

Although most Muppets are left-handed because they were controlled by right-handed puppeteers, it seems that the Muppets controlled by the left-handed puppeteer Louise Gold were right-handed. (www-cs-students.stanford.edu/~csilvers/muppet-faq.html).

Before anyone asks, I agree that this theory of puppetry ought to mean that *all* puppets, and not just Muppets, should be left-handed. And so it should. Whether it does I have no idea. I leave it to some interested reader to publish the definitive study. One might also ask a) whether film makers might also sometimes reverse the images on film or video (see the comment on *Titanic*), and b) whether most of the time right handers are too insensitive to notice this excess of left-handers (see the comment on Van Gogh's *Potato Eaters*, in chapter 11).

The sophisticated cognitive and motor skills have been little discussed by neurologists or psychologists, an insightful exception being the account of Wilson (1998 Chapter 4). There is however no mention of the differences in usage between right and left hands. By way of compensation there is a lovely account of how the Greek name for a puppet was *neurospastos*, a name with several uncanny neurological similarities. The modern word 'neuron' in fact derives from the Greek word for a cord or fibres, which were also the strings that moved the puppet.

WWW 13:4

I have also seen it claimed that Julius Caesar was left-handed (Lindsay, 1996 p.11). However the same source also claims (p.40) that Caesar decreed that the alphabet would go from left to right, a suggestion which is undoubtedly false.

The evidence concerning Commodus' left-handedness is made slightly less clear by Cassius Dio also saying, "Having killed an ostrich and cut off its head, he came up to where

we were sitting, holdiing the head in his left hand and in his right hand raising aloft his blood sword" (Cary, 1927 vol IX, pp. 114-115, Book LXIII).

☞ WWW ☞ 13:5

Gladiator was released May 2000 with Commodus played by Joaquin Phoenix.

At the time of his death Billy the Kid was found with his six-shooter by his right hand and a butcher's knife at his left (Utley, 2000 p.194). Although right-handed, there is no doubt that Billy's gunsmanship was exceptional with both hands. Frank Coe described how he practised continually and, "could take two six-shooters, loaded and cocked, one in each hand ... and twirl one in one direction and the other in the other direction, at the same time" (ibid, pp.32-33). The picture of Billy the Kid posed an interesting problem for *The Guardian* newspaper which has a strong editorial policy of not left-right reversing pictures merely for aesthetic effect. The problem is that the "left-handed" Billy is the true version of the photograph, whereas the "right-handed" Billy is the true version of Billy himself (Mayes, 2001). The problem of tin-type pictures in reversing the image is mentioned by H G Wells in *The Plattner story*, where in one early picture Plattner does seem reversed, but:

"The photograph of Gottfried at fourteen seems to contradict these facts, but that is because it is one of those cheap "Gem" photographs that were then in vogue, taken direct upon metal, and therefore reversing things just as a looking-glass would."

From the details given in *The Plattner story* it would seem that this picture of Gottfried must have been taken in about 1884, much the same time as Billy the Kid was also being photographed.

Michael Ondaatje's *The collected works of Billy the Kid* (1989), subtitled "Left handed poems", was first published in 1970, a decade and a half before the definitive right-handed photograph of Billy turned up. Ondaatje seems however to have hedged his bets somewhat, saying in the text that Billy, "...ate corn, drank coffee, used a knife and fork alternately – always with his right hand. The three days we were together .. he never used his left hand for anything except of course to shoot". The Vintage International edition of 1996 somewhat undermines Ondaatje's sub-title of 'left handed poems' by having a clearly right-handed Billy on its front cover, with his six-shooter at the right hand. Ondaatje (p.98) also reproduces the cover of "The Five Cent Wide Awake Library" edition of the *True life of Billy the Kid*, undated but clearly around the turn of the century, on which it is clear also that Billy is shooting right-handed, suggesting that his left-handedness is a relatively late addition to the mythology.

Billy the Kid is apparently not the only villain who is left-handed, and he has undoubtedly been overtaken in notoriety by Osama (Usama) bin Laden, who is featured in several different news photos using a Kalashnikov in a left-handed way (e.g. *The Observer* 16th Sept 2001), Reuters' prints PD*1701300 and PD*1697121¹). Bin Laden is also described on the FBI's web-site as left-handed (www.fbi.gov/mostwant/topten/fugitives/laden.htm). Perhaps the most intriguing thing about bin Laden is that despite there being a myriad of web-sites

¹ I am grateful to *The Observer* for providing me with copies of these photographs, both of which were frames grabbed from a video. There seems little likelihood that they have been inadvertently reversed.

devoted to famous left-handers, several of which request assistance in keeping their lists up to date, as of 24th Feb 2002 only a single site, based in Japan, has been updated to include bin Laden as a famous left-hander.

☞ WWW ☞ 13:6

The most obvious example in *Titanic* that the embarkation scene is reversed is that the majority of people on the quayside waving good-bye are doing so with their left hand, even though right-handers usually wave goodbye with their right hand. There are also other subtle errors, my favourite continuity problem being the moment when the ship's hawser is being cast off, and then a few seconds later it is seen being hauled in on the deck. When cast off it has a right-hand twist (a Z twist), whereas the rope being hauled in on the deck of the boat has a left-hand twist (an S twist). Since ropes mostly have a right-hand twist, I presume the long shot along the departing boat is mirror-reversed, and the close up of the rope being cast off is not reversed.

☞ WWW ☞ 13:8

Jack Magg's mirror writing is also described on page 179 (Carey, 1997). and on page 188 the writing is described as being "back to front like a Chinaman". Quite why Maggs writes in mirror-script is never really clear, although it is in part a device for ensuring secrecy, particularly when accompanied by the use of invisible ink. That Maggs is undoubtedly right-handed is clear from him keeping his dagger by his right ankle (p.129), and right-handedness is also implied on page 172.

The ability to mirror-write on a blackboard is also helped by the difference in motor organisation between large, slow movements made with the large, proximal muscles of the shoulder girdles, when mirror writing is easy, and the fine, fast movements made with the distal muscles of the hands, when mirror writing is much more difficult.

☞ WWW ☞ 13:12

Pacioli wrote, "Scrivessi ancora allo rovescia e mancina che non si posson leggere se non con lo spectro ovvero guardando la carta del suo rovescio, contro alla luce...": "he wrote in the reverse direction and left-handed, so that it could only be read when held to a mirror, or by looking at the paper from the reverse, against the light..." (Critchley, 1928 p.13). Vasari also comments on Leonardo's left-handedness and mirror writing, saying how Leonardo, "wrote in letters of an ill-shaped character, which he made with the left hand, backwards; and whoever is not practised in reading them cannot understand them, since they are not to be read save in a mirror (de Vere, 1111 vol I, p.634).

The maps of Val di Chiana are in the Royal collection at Windsor, numbers RL12278 and RL 12682 (Clark, 1968), and can be seen in fine reproductions in Clayton (1996 pp97-99). Schott (Schott, 1999) points out that we will probably never know whether the normal script was written with the right or the left hand, although it has been claimed elsewhere that graphological analysis suggests that Leonardo used his left hand for the normal writing, as well as the mirror script (Posèq, 1997b p.43).

There is a real problem in attributing drawings to Leonardo since, as Kenneth Clark put it, "all Leonardo's drawings are done with the left hand and the diagonal shading invariably runs down from left to right. ... Almost every drawing attributed to Leonardo that is shaded from right to left is either unlike him in other respects or is demonstrably a copy" (Clark, 1968 vol 1, p.xvii). The problem is that this is a self-fulfilling prophecy, particularly with regard to the possibility that early in his life Leonardo may have been right handed. There does however seem little doubt that, as Clark points out, from 1473, in a famous dated drawing of the Arno, that Leonardo was mostly using his left hand. However that same drawing, on the verso, does include an inscription written with the right hand (or, to be more precise, written from left to right) (Venturi, 1956 p.89). Venturi concludes that "in his earliest drawings [Leonardo] seems to have employed both the right and the left hand to some extent, but he soon uses the left exclusively" (Venturi, 1956 p.90). Venturi does argue that Leonardo's left-handedness was "congenital", and that "after the earliest drawings, in which he occasionally used the right hand", he was left-handed. That however seems unlikely; congenital left-handers do not usually "occasionally use their right hand", particularly for tasks such as drawing (although they do use the right hand for writing). It is at least possible that Leonardo started out right handed, and had to become left handed because of an accident, and that after the accident he tried, for a while, to use the deformed right hand.

Leonardo does refer explicitly to his right and left hands in describing an episode in which he is striving to look inside a cave: "I came to the mouth of a huge cavern before which for a time I remained stupefied, not having been aware of its existence, my back bent to an arch, my left hand clutching my knee, while with the right I made shade for my lowered and contracted eyebrows" (BM 155.r; MacCurdy, 1958 p.1127). It is difficult to know precisely what to make of this episode, but my feeling is that most right-handers would bend down with their hand on their left knee, and use the right hand to shade the eyes, whereas left-handers would do the converse. If correct, that implies that Leonardo was indeed a natural right-hander.

An interesting feature of Leonardo's mechanical drawings is that when he uses a screw thread it is invariably a left-handed thread (e.g. the design for a screw jack, in the Madrid Codex, I, f.26r). However when, for an exhibition, some of those machines were constructed, they invariably had right-hand screw threads (Anonymous., 1989 pp.223,226).

Late in his life, while he was living in France, Leonardo was visited by Antoni de' Beatis, secretary to Cardinal Louis of Aragon. De Beatis was a careful and accurate observer, and he noted that "on account of a certain paralysis having seized [Leonardo] in the right hand, one cannot expect more fine things from him". Clark suggests that the use of right was a simple error, "*Destra*, presumably meaning his working hand, although Leonardo was left-handed" (Clark, 1959 p.157). That interpretation is vehemently disputed by Clayton (Clayton, 1996 pp.134-6), who says that de Beatis, "meant exactly what he said. Leonardo's notes and drawings, done with the left hand, were strong and confident almost to the end of his life, and it is likely that only painting and other larger-scale manual tasks that required both hands were curtailed by the paralysis in the right hand. Leonardo had continued the physically demanding task of anatomical dissection well into his Roman period, and it may be assumed that his right hand was just as strong then".

☞ WWW ☞ 13:20

Whether or not Prince Charles is left-handed is unclear to me. He writes with his right hand and is said only to show sinistrality when kicking a football or digging Barsley, 1966 pp.169-70, not strong evidence for left-handedness. Barsley (1970 p.166) does however say that there are photographs of Prince Charles presenting prizes with his left hand. As always it shows the difficulty of knowing even whether living, very well-photographed, people are left-handed.

The attribution of left-handedness to Queen Victoria is on the authority of Sir Edwin Landseer, the artist and Queen Victoria's painting tutor, who was himself ambidextrous, and said to be able to draw different objects with the right and left hands simultaneously (Langford, 1984 p.101).

☞ WWW ☞ 13:22

Although George W Bush is 43rd President, he is only the 42nd person to have been President because Grover Cleveland was both 22nd and 24th President.

☞ WWW ☞ 13:24

Woodrow Wilson had a series of strokes on the both the right and the left sides, as well as blindness in the left eye, all probably due to atherosclerosis caused by his hypertension, with thromboses and haemorrhages being the final consequence. Wilson's ability to write so easily with his left hand, coupled with his apparent dyslexia early in life, have suggested to one of his biographers that Wilson suffered from dyslexia. Although Wilson himself was right-handed, one of his three daughters was left-handed, suggesting that either Wilson or, slightly less probably given Wilson's dyslexia, his wife, were carriers of the gene for left-handedness (Weinstein, 1970; Weinstein, 1981).

Examples of Wilson's left and right-handed script can be found in Weinstein (1981 pp142-4, and plates 7-8).

☞ WWW ☞ 13:25

Tumours were said to be 2.6 times more common on the side on which the phone was usually held (Hardell et al., 1999; Hardell & Hansson Mild, 2001), with 57% of patients reporting they used the phone mostly on the right ear, 28% on the left ear, and 15% about equally on the right and left sides. The interpretation of the result is controversial (Hardell & Hansson Mild, 2001; Rothman, 2000; Rothman, 2001) because there seems to be no overall increased rate of tumours. The numbers of cases involved are however small, and a replication is badly needed. What does seem clear is that if it is generally the case that mobile phones are held to the right ear (and about 60% of people are right eared), then the presence or absence of an excess of right-sided brain tumours provides a strong test that local heating due to electromagnetic radiation could cause temporal lobe tumours.

☞ WWW ☞ 13:26

I do not know the original source for the translation of *Ecclesiastes* quoted by Critchley (Critchley & Critchley, 1978 p.94).

☞ WWW ☞ 13:27

Wölfflin was far from the first to recognise that pictures look different in mirrors, although he was probably the first to ask why it was the case. Leon Battista Alberti in his *De Pictura* of 1435 (Grayson, 1991) says that "the mirror shows every weakness in a painting manifestly deformed" (Posèq, 1997b; and Leonardo also made a similar comment in his notebooks, "When you are painting you should take a flat mirror and often look at your work within it, and it will then be seen in reverse, and will appear to be by the hand of some other master, and you will be better able to judge of its faults than in any other way" (MacCurdy, 1958 pp.887-8); see also Posèq (1997b). Wölfflin (1941) has been much cited, for instance by Gaffron (1950), Oppé (1944) and Uhrbrock (1973).

An interesting question was whether when Rembrandt drew his picture he took into account that it would be reversed during printing. The answer seems to be, almost certainly yes, particularly given that Rembrandt was well aware of the effects of mirrors, having a large one in his studio (Konstom, 1977), and that he would modify pictures drawn using the mirror to ensure he obtained the effects he wanted (van de Wetering, 1999).

Although naive observers do not seem to be able to distinguish a portrait and its mirror image (Blount et al., 1975), and using a technique known as the semantic differential observers make the same judgements about the meaning of a portrait and its mirror image, nevertheless those portraits painted by the artist as showing the left cheek have a different perceived meaning from those painted as showing the right cheek (McManus, 1979). Artists themselves must therefore distinguish the meaning of the right and the left cheek.

☞ WWW ☞ 13:28

The question of quite why right-right and left-left chimeric or composite faces look so different is complicated. For a good review see Asthana, Bhushan, & Mandal, 2000.

Painted portraits and photographs are very rarely straight on to the camera, except sometimes in passport photos and 'mug shots'. The 'canonical position' is the 3/4 turn, with both eyes visible and the profile of the nose also clearly outlined (Laeng & Rouw, 2001). Painted portraits and photographs tend preferentially to show the left cheek, which has the effect of swinging the critical information, the nose and mouth, into the area which will be preferentially processed by the right hemisphere (Humphrey & McManus, 1973; McManus, 1979; McManus & Humphrey, 1973).

☞ WWW ☞ 13:29

There is a suggestion that the left-right differences in shadowing are partly reversed in left-handers (Sun & Perona, 1998).

☞ WWW ☞ 13:30

The finding of a left-sided bias in child holding has been repeated in a range of Western countries (Sieratzki & Woll, 1996), as well as in Sri Lanka (Bruser, 1981), and in the Yanamano Indians of the Amazon basin (Bolton, 1978). Many explanations have been put forward, including the involvement of cerebral dominance, either on the part of the mother or the child, typically to do with improved perception of language by the left hemisphere or emotion by the right hemisphere when the child is held on the left side (Sieratzki & Woll, 1996). Although ingenious, most studies have only looked at population proportions, and when detailed individual studies have been carried out the hypotheses find no support (Turnbull & Bryson, 2001). Any explanation invoking cerebral dominance will have troubles coping with the finding that infant chimpanzees prefer to suckle from the nipple on the mother's left side (Nishida, 1993).

Since writing this chapter and suggesting that the key test of Salk's heartbeat theory of cradling is to look at mothers with *situs inversus*, I have become aware of the chapter by Turnbull and Lucas (2000), where they describe a single case report of a mother with dextrocardia (Todd & Butterworth, 1998) who cradled on the left side. Of course a single case is not sufficient to refute the model, but as Turnbull and Lucas say, it does confirm that the theory is in principle testable. Turnbull and Lucas, after reviewing a number of theories of the phenomenon conclude, "It appears that the cause of the leftward cradling bias continues to elude us. It is certainly regrettable that such an apparently simple, and empirically robust, phenomenon does not have an acceptable explanation." (Turnbull & Lucas, 2000 p.284).

☞ WWW ☞ 13:32

The original study (Weiskrnatz, Elliott, & Darlington, 1971) confirmed an old suggestion, going back at least to Darwin, that it is more difficult to tickle oneself than to be tickled by someone else.

The experimenters comparing the tickle sensitivity of the right and left foot (Smith & Cahusac, 2001) carried out their study because in an earlier investigation an incidental finding was that the right foot seemed to be more sensitive to tickle than the left foot (Ruggieri & Milizia, 1983). The new finding is therefore a replication, giving it greater validity.

☞ WWW ☞ 13:34

Whether the definition actually emphasised the *left* feet, as has been claimed by the National Physical Laboratory (Anonymous, 2000), I have been unable to confirm. However the authoritative *The weights and measures of England* (Connor, 1987 p.44) does not mention which particular foot, although it does mention a late woodcut in Jakob Kobel's *Geometrei* of 1535, printed in Frankfurt am Main, of a line of men standing heel to toe, wearing shoes, while the combined length is measured. I have not seen the original and so am not clear if they are the left feet. However practicality would seem to require that all the men had the same foot heel to toe.

☞WWW☞ 13:35

There is also a theory attributed to Michael C.S. Kingsley and Malcom A. Ramsay ([http://www.gi.alaska.edu/ ScienceForum/ASF8/895.html](http://www.gi.alaska.edu/ScienceForum/ASF8/895.html)) that the rotation occurs precisely because it does keep the tusk straight. Without the rotation any tiny deviation in growth would make the tusk massively curved (rather like an elephant's or a wart hog's) and that would undoubtedly interfere with swimming. Even if that is correct though there still seems to be some additional factor to explain why it is only the left tusk that grows and why it always spirals to the left.

☞WWW☞ 13:36

For a good description of the curious history of the unicorn and its evolution and transformation during the Middle Ages, see <http://pages.infinit.net/cerame/heraldicamerica/etudes/unicorn.htm>.

☞WWW☞ 13:39

The quotation marks around the title "*Pip*" are seemingly a formal part of the title. Barsley summarises 'Pip' with fine irony: "Ian Hay's hero is certainly a topping example of how a good sort can be left-handed". Barsley claims also that "no doubt Pip played [golf] right-handedly. Left-handed golf-clubs had yet to be introduced" (p.89). However in "*Pip*" it is clearly stated that "At the next hole Pip sliced his drive, the ball flying an immense distance and curling away out of sight to their left. (You must remember that he was a left-handed player)" (Hay, 1939 p.229). 'To slice' in golf means the ball is hit so that it deviates *away* from the striker, so that presumably means Pip was playing left-handed. When left-handed golf clubs were introduced I have no idea but presumably on this basis before 1907.

☞WWW☞ 13:40

The translation is by Thomas Carlyle, originally published in 1824 (Carlyle, 1874). The passage raises the interesting question of whether Goethe himself was left-handed, and needless to say there have been claims to that effect, usually suggesting he wrote with his right-hand but was a natural left-hander (see Sattler, 1999 pp.267-8). Goethe spent several years of his life trying to become an artist, although he eventually decided that he had insufficient talent. The drawings he produced during that period appear to have the diagonal shading that one would expect a right-hander to produce (Sieveking, 1998), and so it seems he probably was a right-hander.

☞WWW☞ 13:41

Interestingly, Holmes emphasises the importance of right and left earlier in the story, as he says to Watson,

"There is nothing more obvious deceptive than an obvious fact ... To take the first example to hand [sic], I very clearly perceive that in your bedroom the window is upon the right-hand side..."

"How on earth —"

“My dear fellow, I know you well. ... You shave every morning, and in this season you shave by the sunlight; but since your shaving is less and less complete as we get farther back on the left side, until it becomes positively sloven as we get round the angle of the jaw, it is surely very clear that that side is less illuminated than the other”.

Watson is, of course, right-handed, and has more difficulty shaving on the left hand side.

WWW 13:42

I tried searching on the internet for jokes and found very many appalling jokes, but hardly any about the right and left hands. Certainly I don't count the 'rightie' jokes on web-sites such as <http://www.getodd.com/fun/left/rhjokes.html>, where 'right-hander' has merely been substituted for 'Irishman', 'Pole', 'Newfoundlander', 'blonde' or whatever in a host of stereotyped jokes in which the right-handedness plays no role at all in the humour.

Barsley is not so foolish as only to claim 'copyleft', since presumably that would have no legal value, and so the international copyright symbol, ©, is also there.

During 2001 there was a vociferous movement within science to make scientific publishing open and non-commercial, with ready access to all, principally by using the internet (see Lawton (2002)). That would mean abolishing much of the copyright held by commercial publishers, and replacing it with what has also been called 'copyleft', which in effect makes all publications open to all from six months or less after publication. It is an interesting transmutation of right to left.

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