

Chapter 2: Hypernotes

☞ WWW ☞ 2:1

Hertz and his companions now lie side by side in the military cemetery at Haudiomont, Meuse, near Verdun.

☞ WWW ☞ 2:3

Mary Douglas in her introduction to the 1990 translation of Mauss' *The gift*, paraphrases the theory as, “A gift that does nothing to enhance solidarity is a contradiction” (Mauss, 1990). Mauss also mentioned on one occasion the origin of the use of the left and the right hands in a comment that was both fully Durkheimian and Hertzian: “In order to know why [a Moslem] makes this gesture and not another, neither the physiology nor the psychology of motor dissymmetry in man are sufficient; it is necessary to know the traditions that impose it” (1936, cited by Parkin (1996 p.61)).

☞ WWW ☞ 2:4

Certainly Durkheim and his school have been influential. Lévi-Strauss described how few people have been able to read Mauss's *Essay on the Gift* without feeling “a beating heart, a seething brain, and the spirit invaded by any indefinable but imperious certitude of being present at a decisive event in scientific evolution” (Firth, 1975).

Not all anthropologists have been totally sympathetic to all aspects of Durkheim and his group. The distinguished Oxford anthropologist Evans-Pritchard was not happy with appeals by the Durkheimians to a collective consciousness which emphasised differences between the sacred and the profane, which Evans-Pritchard described as “a polarity which I find to be almost equally vague and ill-defined”. Although it is tempting to sympathise with this view – and the sacred and profane are not of much immediate relevance in the everyday lives of many people at the beginning of the twenty-first century – one should not dismiss the concept immediately. It is a bit like our ideas about the thought of Sigmund Freud, who was theorising at almost much the same time. When I teach modern students about Freud they invariably complain that Freud seems to see sex in everything, and that much of the symbolism and its interpretation seems to be laughable. Partly that it because they are forgetting the way that sexual innuendo permeates almost all of our modern life, often to the point of obsession (and one only has to think about many adverts, such as the one for a car in which a woman purrs that ‘size does matter’). The modern counter-point to the late nineteenth century Viennese attitudes to sex, which Freud was analysing, is found in our fear of death. Few people except professionals witness it, and we are all living longer than ever before in a world that is safer and healthier than at any time in history, and yet people go to

immense lengths to avoid death, to reduce the risk of it, and will often not talk or even think about death. Likewise, although much of the modern world is secular, in Durkheimian Paris, religion was still of central importance in a way which our modern agnostic and atheistic world has almost forgotten¹; so it is not surprising perhaps that it permeated Durkheim's theorising. In the modern world the sacred has not in fact disappeared, but it has instead re-emerged in the guise of the worship of art, of nature, or, in some cases, of science.

☞ WWW ☞ 2:5

The quotation by Sir Raymond Firth was inadvertently not cited in the book proper. It was made in a review of Needham's *Right and Left* (Firth, 1975). Firth died in February 2002 at the age of 101.

Sperber (1975) has pointed out that the handshake has what might be called its own 'myths of origin', stories we have invented to make sense of our behaviour, "one shows that one is not armed; by extending the right hand, one makes it impossible to hit the other"; etc... The quotation from *Madame Bovary* can be found in Part 2, chapter 6.

The traditional approach to anthropology, of trying to study only 'primitive' societies, poses an inevitable problem for anthropology, as Evans-Pritchard emphasised (Hertz, 1960 p.24). Modern societies are homogenising rapidly, and true cultural independence is now rarely possible. In many cases anthropologists can only resort to studying the field notes of their predecessors, and that intellectual capital is limited and will one day be exhausted. The researcher is also left one (or even several) steps removed from the reality and impact of the phenomena and beliefs themselves.

As an example of how modern anthropologists will study almost any aspect of society, and perhaps need to do so, I particularly relish the story by Joan Cassell, an American anthropologist, who described an event in an operating theatre:

"...I snatched a mask, entered the operating room, and moved next to the anaesthesiologist... The surgeon has just opened the patient. The room was silent as he concentrated on the procedure. Later, however, when the tricky part was over, he looked up and caught my eye. 'Who are you?' he inquired in a commanding tone. This was his territory and I was obviously an interloper. 'I'm Joan Cassell - I'm an anthropologist studying surgeons'. ... 'What's an anthropologist doing studying surgeons?' he ... demanded. With absolutely no conscious volition on my part, I heard my voice responding, "'Well there were no other primitives left'" (Cassell, 1998 p.10).

☞ WWW ☞ 2:6

Hertz was in London from October 1904 to July 1905, when he and his wife stayed at lodgings in Highgate, and again in July and August 1906, and once more in the autumn on 1910 (Parkin, 1996). In many ways Hertz's paper anticipated a more influential paper by W.H.R. Rivers, the anthropologist and psychiatrist who subsequently became famous as the principle character in Pat Barker's award-winning novel, *The Ghost Road* (Slobodin, 1997 p.167).

On the necessarily social nature of death, Hertz (1960 pp.27,77) wrote:

¹ It is well demonstrated in a visit to the cemetery at Montparnasse where Durkheim is buried (although regrettably the inscription on his own grave is almost illegible).

“where a human being is concerned, the physiological phenomena are not the whole of death. To the organic event is added a complex mass of beliefs, emotions and activities... Death does not confine itself to ending the visible bodily life of an individual; it also destroys the social being grafted upon the physical individual”.

☞ WWW ☞ 2:7

Although Durkheim does not mention Hertz in his *The elementary forms of religious life* of 1912 (Durkheim, 1995), he does in the introduction discuss the problem of the representation of space:

"To have a spatial ordering of things is to be able to situate them differently: to place some on the right, others on the left, these above, these below... [S]pace would not be itself if ... it was not divided and differentiated. But where do these divisions that are essential to space come from? It itself it has no right, no left, no high, no low, ... All these distinctions evidently arise from the fact that different affective colorings have been assigned to regions. And since all men of the same civilisation conceive of space in the same manner, it is evidently necessary that these affective colorings and the distinctions that arise from them also be held in common – which implies almost necessarily that they are of social origin." (p.11)

Despite the apparent conclusion that the meaning of space must be socially constructed, the phrase "almost necessarily" allows an alternative interpretation, mentioned in a footnote, that, "all individuals, by virtue of their organo-psychic constitution, are affected in the same manner by the different parts of space". Durkheim rejects the notion because "the divisions of space vary among societies – proof that they are not based exclusively in the inborn nature of man", although probably Hertz would have disagreed, at least for the meaning of right and left.

☞ WWW ☞ 2:8

In part the Kurgans were building on pre-existing symbolisms already being used in the Neolithic cultures of Europe whereby, for instance, burial mounds had their high end to the east, and with individual burial chambers to the right of the passageway facing east (Kraig, 1978 p.164).

This sort of pattern is far from restricted to Indo-European burials. For instance in east Africa, the A-Kamba place the corpse of a man on his right side and the corpse of a woman on her left side; likewise, the Acholi bury the corpse of a man on the right side of the door, and of a woman on the left side of the door (Wieschoff, 1938 p.61).

The argument that one has to look at the entire *set* of symbolisms is a bit like analysing style in music. Given a single tune, it is difficult to make anything of it in stylistic terms. But once one has heard a couple of tunes, all of which say they are ‘the blues’, it is obvious that there is a clear set of rules of which all the different exemplars are valid cases, but that, for instance, nursery rhymes are not. ‘The blues’ is not any one tune but the commonality of rules of the entire set.

☞ WWW ☞ 2:9²

In *The Rime of the Ancient Mariner*, Samuel Taylor Coleridge describes how, as the Mariner sails south:

"The sun came up upon the left,
Out of the sea came he!
And he shone bright, and on the right
Went down into the sea."

Subsequently, when "the good south wind still blew behind", "The sun now rose upon the right.... / and on the left / Went down into the sea".

☞ WWW ☞ 2:11

Clocks do indeed go in the same direction as the sun, but that is not necessarily the reason that clocks do go clockwise, as can be seen in chapter 12.

Even though it was auspicious for omens to go to the right, there is a problem that it is not at all clear which direction that actually was in Ancient Greece (Braunlich, 1936).

Despite port being passed clockwise, there is also the seeming contradiction that it is also passed to one's *left*:

"The most widely-known tradition is that of *passing the port*. British naval officers meticulously passed the port from "port to port" – that is clockwise. Traditionally, the decanter of port is placed in front of the host who then serves the guest to his right and then passes the decanter to the guest on his left. The port is then passed to the left all the way back to the host" (www.intowine.com).

The ambiguity arises because at dinner one sits on the outside of a circle looking in, whereas looking at the sun, one stands at the centre of a circle looking out. Right and left and hence reversed. The difference results in much confusion of interpretation. The phrase Catharpin fashion was, according to Cook (1914) used in a dictionary of slang of 1690. I have been unable to find it anywhere else.

Although at the opening of the Vienna Opera Ball it is traditional for the waltz to be danced anti-clockwise, that is in part to exclude those who have not practised this more difficult step. Those selected to take part have to arrive in Vienna a week beforehand in order to rehearse the anti-clockwise waltz.

Blake-Coleman 1982 found that of 216 16th and 17th century machines, 62% of 102 hand-turned prime movers rotated clockwise, as did 58% of 114 water, wind, horse, and other movers. However in 83% of cases the final motion was clockwise.

The full text of Richard Serra's comments is:

Interviewer: "Given the precarious nature of the walk through the corridor, have you any preference as to whether people go round it clockwise or anticlockwise?"

² ☞ WWW ☞ was inadvertently omitted from the notes in the book.

“Serra: “The passage is equally narrow on both sides of the opening into the inner ellipse, so it shouldn’t really matter whether one walks in one direction or the other. I feel that it is less destabilising to walk the passage clockwise. But that might just be my preference, although I think it’s a natural impulse to walk to the right” (Sylvester, 1999).

A similar phenomenon is also seen in the Millennium Dome in Britain, which on 1st January 2000 opened to great fanfare. However by the end of January it was apparent that attendance was insufficient to make it financially viable, and an expert was brought in from Disneyland to give it a make over and make it more attractive. Amongst the changes implemented was converting the circulation of people around the exhibits from anti-clockwise to clockwise.

☞WWW☞ 2:13

In a letter to his future biographer, Ernest Jones (Paskauskas, 1993 p.31). Jones in a reply about two months later even suggests that early masturbation might determine right and left handedness:

“Might early auto-erotic practices not determine which was to be [the] later skillful hand, in some cases right, in others left. Probably this is quite foolish, but if you think there might be anything in it I should be glad to know” (p.35).

There is no indication of what Freud thought of this idea.

The apparently simple symbolism of the Gogo is actually more subtle and complex here, one correspondent telling Rigby (1966a), “this left hand is clever in one way, and the right is foolish...”.

The Chinese method of diagnosing the sex of a child is, of course, the opposite way around from that which might be expected in the Western tradition. Granet (1973), who cites the example, points out that in many senses ‘left’ in Chinese tradition is the *honourable* side, and that it does not have the solely negative connotations found elsewhere; this is however only “a certain pre-eminence... but this pre-eminence is only occasional” (p.57). It might also be worried, given the general inability of scientists to predict sex antenatally before the era of ultrasound and amniocentesis, that the system was doomed to obvious failure. The cop-out which saves any wrong diagnosis is that if a fetus moves towards the right it belongs on the right – in other words, it can be on the left but demonstrate by the subtlest of movements that it should have been on the right.

There is an interesting parallel in both the Kaguru and in the Shakespeare quote, although the details are very wrong, to modern research on ‘genomic imprinting’ which finds that some fetal organs depend almost entirely on genes from the mother and others almost entirely on genes from the father.

☞WWW☞ 2:14

For Anaxagoras' theory that male children come from the right testicle, see Aristotle, *De Gen. An.*, 763, b.31 (Peck, 1953 p.373). Leophanes suggested this was true for humans (Peck, 1953 765.a.25 p.383), and Pliny suggested it was the case for sheep (Rackham, 1983 VIII: LXXII, p.133). Pliny also suggested that in oxen, the sex of offspring could be determined : “It is said that if the bulls after coupling go away towards the right hand side the offspring will be males, and if towards the left, females” (VIII: LXX, p.125).

The quotation by Mrs Ida Ellis is from Pearsall (1971 p.303). Mrs Ellis also continues with an interestingly scientific further prediction, a potential refutation, and finally a non-scientific device which ‘saves’ the theory:

“men who have only one testicle can only beget one gender, but sometimes they do not descend, remaining in the body, in which case a child of either gender may appear”.

Experimental proof that the right testicle in animals did not produce males was provided by King (1911), and Copeman (1919); see also Crew (1952).

For the theories of Empedocles, see Aristotle, *De Gen. An.*, 763 b.31 (although Aristotle also reported cases which contradicted the theory, *De Gen. An.* 765 a.18). A modern version of the theory suggested that males came from the right ovary and females from the left ovary (Dawson, 1909), although experimental evidence refutes that theory (Doncaster & Marshall, 1910; King, 1909; King, 1911). For more details on ancient theories of sex determination see McManus (1979, Chapter 12), and for left and right in general in the Greek world see Lloyd (1966b).

☞WWW☞ 2:15³

The Purum are located at 24° 26' N, 94° 0' E. (Das, 1945). They were studied by Tarakchandra Das and his students on four separate field trips between 1931 and 1936, when they numbered only 303 individuals. By the time Das's detailed monograph was ready for publication in 1941 there was a severe shortage of paper because of the war, and it could not be published until 1945. By then the fate of the Purums was very unclear. In his Preface, Das says,

“The four villages of the Purums were situated very near Palel which was the scene of severe fighting between the allies and the Japanese on several occasions. How the poor Purums fared in this struggle for domination I am unable to state at present. If they had not retired to some safe place in the interior of the hills before the appearance of the Japanese on this front they must have gone out of existence” (p. vii Das, 1945 p. vii).

Although his own war-time experience made Needham concur with Das's gloomy prognosis, Needham (1958 p.98) reported that in October 1956 the Purums had returned and rebuilt their villages.

It is worth stating that although Das does not comment on it himself, the Purum are almost certainly mostly right-handed, as far as one can tell from the photographs in the book, where only the right hand is seen carrying out skilled activities. We are also told that the women usually wear a single piece of cloth, knotted below the left arm pit, suggesting right-handedness (p.98). It should also be said that they were a pre-literate society, although elementary reading and writing had recently been introduced at elementary schools.

Needham has been extremely influential in regenerating interest in Hertz, not only by translating Hertz's essays on death and on the right hand (Hertz, 1960), but also by editing an influential book of readings on the symbolism of the right and left hands (Needham, 1973), and by his own structural analyses of the two hands (Needham, 1979).

³ ☞WWW☞ was inadvertently omitted from the notes in the book.

☞ WWW ☞ 2:17

The Toraja are interesting in that there is an explicit anthropological mention that “The Toraja have also reflected upon how it has come about that men do everything with their right hand” (Wieschoff, 1938 p.75); the answer is, needless to say, symbolic and to do with life and death.

☞ WWW ☞ 2:18

Needham 1979 p.52. put the problem very forcefully, and I have merely paraphrased his comments:

“It is not necessary that the house should be divided into a right half and a left half, or that wife-givers should assigned to the right and wife-takers to the left. It is not necessary that wife-givers should be considered superior to wife-takers, any more than it is necessary that right should be regarded as superior to left”.(Needham, 1979 p.52).

Although it does seem as though right-left symbolism does take the same form everywhere, it is also necessary to be reassured that we are not simply ignoring the ‘negative’ cases, the ones which might not fit the theory. Are there in fact any situations in which left is superior to right? One possible case was the Mugwe, a religious dignitary amongst the Meru of Kenya, for whom the *left* hand is sacred. A detailed analysis by Needham (1960), suggests that this still fits within a standard scheme, mainly because left and right and left also relates to sacred and profane; as a result, since the right hand is used for everyday activities, at which it is more proficient, the left hand is then left for the sacred.

☞ WWW ☞ 2:19

Sir Thomas Browne also mentions that the Egyptians thought there was a nerve running directly from the heart to the ring finger: “But how weak anatomists they were, which were so good embalmers...”.

Although the term ‘morganatic’ seems to be in popular use as a description of a marriage in which one partner has previously been divorced, the proper description is of a marriage between a man of high social status and a woman of lower social status where the wife shall not be entitled to the dignities nor the possessions of her husband. The *Concise Oxford Dictionary* has at the etymology, "French *morganatique* or German *morganatisch* from medieval Latin *matrimonium ad morganaticam* ‘marriage with a morning gift’, the husband's gift to the wife after consummation being his only obligation in such a marriage".

☞ WWW ☞ 2:20

Fabbro (1994) has identified 151 verses in the Old Testament and 49 in the New Testament referring to right and left. The vast majority of the references are to the right rather than the left.

Detailed statistics on the portrayal of right and left can be found in McManus (1979, chapter 13). Although the Madonna and Child paintings show the pattern I have described at the beginning at the end of the 13th century, by the sixteenth century the pattern has changed entirely, probably due to theological considerations resulting from the Cult of the Virgin Mary.

McManus, 1979; Sattler, 2000.

Paradise Lost, V: 689; V: 726: VI: 79. Fowler (1971) traces these references back to *Isaiah*, 14, xiii. Milton does associate the use of the left rib with the warmth and blood of the heart (*Paradise Lost* IV: 484). In 1608, Andrew Willett in his *Hexapla* commented, “It is a superficial question out of what side of Adam, Eve was taken ... It is resolved by most out of the left because Adam’s heart lay there; but these are frivolous and needlesse matters”.

☞ WWW ☞ 2:21

Psalms 118, v. 16. There are parallels with an Akkadian creation epic, “[Marduk] lifted the mace, grasped it in his right hand”. Plessner (1970) emphasises that the values attached to right and left in the Old Testament are similar to those elsewhere in world literature. The earliest reference, *Genesis* 48: 15, “and Israel stretched out his right hand and laid it upon Ephraim's head ... and his left hand upon Manasseh's head”, implies a preference for the right over the left. Because all of the Old Testament uses of 'left' are geographical, whereas 'right' is only once used geographically (*II Kings* 12: 10), and 'right' is often used instead of 'hand' or 'side', then wherever 'the hand' is referred to, Plessner says it should always be regarded as referring to the right hand.

For left and right in the Talmud see Anonymous., 1916 X:419

On putting on shoes, see Wile, I. S. *Handedness: Right and left*, Boston: Lothrop, Lee and Shepard, 1934 p.218 Wile, 1934 p.218. There is a strong parallel with an Islamic tradition,

"Allah's Apostle said, 'If you want to put on your shoes, put on the right shoe first; and if you want to take them off, take the left one first. Let the right shoe be the first to be put on and the last to be taken off.'" *Sahih Bukhari*, Volume 7, Book 72, Number 747: (<http://www.usc.edu/dept/MSA/fundamentals/hadithsunnah/bukhari/072.sbt.html>)

☞ WWW ☞ 2:22

It is said that a part of the propaganda against the Shah of Iran which was put out by the Ayatollah Khomeini when he was in exile in Paris was that the Shah must have been cursed by Allah because his first-born son was a left-hander (www.ausport.gov.au/fulltext/1998/sportsf/sf980227.htm). Nevertheless modern Islam does seem more tolerant: at <http://islam.org/dialogue/Q325.htm>, the answers to which are provided by *Arab News* in Jeddah, it is clear that other attitudes are also prevalent. The question reads, “I am a 12 year old student, and I am left-handed. People have often reminded me not to eat or write with my left hand, because people who do so will not go to heaven; they will go to hell. ... I will be grateful for your advice”.

☞ WWW ☞ 2:25

Davidson emphasises that such left-right differences are rarely simple, and cites an analysis of the Pierre Bourdieu as an example (Bourdieu, 1990). Bourdieu had also cited examples of the interpretation of left and right in his earlier book (Bourdieu, 1977). Bourdieu died in February 2002.

In the second quotation, Davidson is careful to say “probably, anticlockwise” since it is not at all clear which direction the Greeks were referring to when they said “to the right” (Braunlich, 1936).

☞ WWW ☞ 2:27

Bismarck actually wrote about his dream in a letter to Kaiser Wilhelm I on Dec 18th, 1881, in reply to a letter from the Kaiser describing a dream of his own. The dream is discussed by Freud in his *Interpretation of Dreams*, where he talks about the analyses of Sachs and Stekel, who concluded that in dreams ‘left’ stands for what is wrong, forbidden and sinful (Freud, 1976 pp.475-503). The dream is discussed in the fifth edition of *The interpretation of dreams*. Butler, A. J. *Bismarck: The man and the statesman; being the reflections and reminiscences of Otto Prince von Bismarck*, London: Smith, Elder and Co, 1898vol II, p.210 Butler, 1898vol II, p.210.

In *The interpretation of dreams*, Freud quotes from Stekel:

“in dreams ‘left’ stands for what is wrong, forbidden and sinful ... [It] might very well be applied to masturbation carried out in in childhood in the face of prohibition. ... The fact that seizing the rod was a forbidden and rebellious act was no longer indicated except symbolically by the ‘left’ hand which performed it.”

“... ‘right’ and ‘left’ in dreams have an ethical sense. ‘The right-hand path always means the path of righteousness and the left-hand one that of crime. Thus ‘left’ may represent homosexuality, incest or perversion, and ‘right’ may represent marriage...”

Domhoff (1968) also follows Erich Fromm in seeing “the Left way” as being essentially that of Marxism.

☞ WWW ☞ 2:29

Needham has expressed very well how remarkable it is that right-left symbolism is the same the world over:

“It is very remarkable that civilisations most distant from each other in time and space should have constructed practically identical dual classifications, composed of such standard oppositions as right/left, male/female, strong/weak, superior/inferior, light/dark, and so on” Needham, 1979 p.32.)

And Hertz also expressed it in his typically forceful style:

“[F]rom one end to the other of the world of humanity, in the sacred places where the worshipper meets his god, in the cursed places where devilish pacts are made, on the throne as well as in the witness-box, on the battlefield and in the peaceful workroom of the weaver, everywhere one unchangeable law governs the functions of the two hands. ... The supremacy of the right hand...” (Hertz, 1960 p.109-110)

☞ WWW ☞ 2:30

Hertz's views can be summarised in a series of quotations from his essay on the right hand:

“we are right-handed because we are left-brained”;

“[there] is no reason for dogmatically denying the action of the physical factor”;

“in spite of the forcible and sometimes cruel pressures which society exerts from their childhood on people who are left-handed, they retain all their lives an instinctive preference for the use of the left hand”;

“Organic asymmetry in man is at once a fact and an ideal”;

“The preponderance of the right hand is obligatory, imposed by coercion, and guaranteed by sanctions: contrarily, a veritable prohibition weighs on the left hand and paralyses it.”

Parkin (1996 p.64) has a powerful and telling comparison, which shows the force of the ideology underlying right and left:

“handedness is a problem of the same order as incest – a cardinal attribute of human populations, yet subject to varying degrees of representation and contradiction cross-culturally, existing wholly within neither nature nor society, but belonging partly to both and thus linking them”.

☞ WWW ☞ 2:31

A nice literary example of dualism is found in Janette Winterson's *Gut symmetries*:

“our ... world of dualities and oppositional pairs: Black/white, good/evil, male/female, conscious/unconscious, Heaven/Hell, predatory/prey” (Winterson, 1997 pp.4-5)

Hertz was talking about dualism when he described the human mind’s “innate capacity to differentiate”. (Parkin, 1996 p.61). Although I have presented the account of Hertz and dual symbolic classification as if it is totally accepted within anthropology, that is not entirely the case. In particular Louis Dumont (1979), and his student Tcherkézoff (1983; 1987a), have strongly criticised the theory – indeed Dumont simply said of the view of Hertz, “It is wholly mistaken” (1980 p.220). The nature of the argument is, to say the least, subtle. Needham 1987b devotes many pages to them, pages which he describes himself as “very taxing” and “somewhat tedious”. Needham’s account of Dumont shows his despair at trying to understand quite what the theory is saying, and with the barbs that only an Oxford academic can wield with such devastating accuracy, Needham describes Dumont’s style as, “assertive yet recondite, abrupt in pronouncement yet enigmatic in implication” and notes “The degree of fervour ... that marks his argument ... especially [in] those parts that are hardest to make out”. I confess I find a similar problem, although Parkin (1996 pp.845-86) is somewhat more sympathetic, emphasising the key point that Dumont does not believe that the two items in an oppositional pair are symmetric or equivalent, but instead there is a hierarchy, one being dominant to the other. Critics of Hertz have also questioned whether it is empirically correct that *all* cultures favour the right over the left, and although occasional examples have been found where left does seem to be symbolically preferred (again, see Parkin for a good review), the very scarcity of the few counter-instances can hardly overwhelm the vast mass of evidence in favour of Hertz’s position.

Anthropologists have their own version of the old dualist joke: “... there are two kinds of people in the world – those who divide everything into two and those who don’t” (Needham, 1987b p.6).

The psychologist George Kelly, who died in an air-crash in 1966, founded personal construct psychology around the central idea that human thought is determined by the way in which the world is classified into polar opposites (Bannister & Fransella, 1971; Kelly, 1955). Studies since then have provided clear evidence for the psychological importance of the way the world is categorised, with, for instance, organisms divided into ‘animals’ and ‘plants’,

trees divided into 'evergreen' and 'deciduous', and animals into those which are or are not 'birds'. The benefits are two fold. As well as being economical of cognitive effort, such classifications often also reflect the way the world actually is organised and has evolved – biologically, birds really are a separate category of animals, 'organisms with feathers' which are all descended from an early avian ancestor with feathers (Rosch, 1978, Palmer, 1978). Cognitive categorisation also occurs in what is known as 'categorical perception' (Harnad, 1987). Speech sounds generated by a computerised speech synthesiser can be made to vary physically along a continuum, but we typically only hear two or three categories. And likewise, the million or so discriminable colours between pure red and pure yellow are described only with by a very small number of colour categories, 'red', 'yellow', or 'orange' (Berlin & Kay, 1969). The categories of speech sounds and colour are probably hard-wired into the structure of our brains. Classification and categorisation is "a very basic cognitive activity.

☞ WWW ☞ 2:32

Hertz actually says:

“Powers which maintain and increase life, which give health, social pre-eminence, courage in war and skill in work, all reside in the sacred principle. Contrarily the profane ... and the impure are essentially weakening and deadly: the baleful influences which oppress, diminish and harm individuals come from this side. So on the one side there is the pole of strength, good and life; while on the other there is the pole of weakness, evil and death. Or, if a more recent terminology is preferred, on one side gods, on the other demons”.

And as Hertz says, how could man's body escape this polarity which applies to everything else? Indeed he goes so far as to say that “If organic asymmetry had not existed, *it would have had to be invented*”.

Subsequently Lévi-Strauss was to make a similar argument, "argu[ing] that binary classification is a fundamental property of human mental processes" (Hallpike, 1979 p.224), although, as Hallpike puts it, “Exactly what Lévi-Strauss means ... is, as usual, thoroughly elusive” (p.224).

☞ WWW ☞ 2:33

Hertz actually says,

“The religious necessities which make the pre-eminence of one of the hands inevitable do not determine which of them will be preferred. How is it that the sacred side should invariably be the right and the profane the left?”.

“The slight physiological advantages possessed by the right hand are merely the occasion of a qualitative differentiation of which the cause lies beyond the individual, in the constitution of the collective consciousness. An almost insignificant bodily asymmetry is enough to turn in one direction and the other contrary representations which are already completely formed”.

The application of a little effort to produce a large effect by invoking the powers of a much larger system is also the principle of many sports. A skier who turns on the top of a mogul takes advantage of the system being poised on the edge of chaos, at a moment when a tiny input produces a large output. Likewise a tiny force correctly applied at just the right moment will make a child fly high on a swing.

Hertz does not in his essay try to address the question of the origins of dualism and polarity, although he does comment that it is “one of the profoundest questions which the science of comparative religion and sociology in general have to solve”. He is right.

☞ WWW ☞ 2:34

The disagreement about symbols is part of a wider malaise, Dan Sperber, commenting that, “The fact is that there is very little agreement amongst anthropologists about anything” (Sperber, 1996 p.15)⁴. Sperber’s assertion is readily supported by the strong attack on his ideas by Foster 1995, despite her having included a long essay by him in a previous volume she had edited (Sperber, 1980). I realise of course that it is also nothing but folly for a psychologist such as myself to step into an arena where even anthropologists themselves seem to find little agreement.

☞ WWW ☞ 2:36

Sperber is not alone amongst anthropologists in suggesting that symbolism is a natural part of the human mind, Needham for instance saying that, “the symbolic opposition of right and left, and a dualistic categorization of phenomena of which this opposition is paradigmatic, are so common as to seem natural proclivities of the human mind”. (Needham, 1960 p.123).

Sperber says of his proposed mechanism,

“I clarify my hypothesis: the conceptual mechanism never works in vain; when a conceptual representation fails to establish the relevance of its object, it becomes itself the object of a second representation. ... [T]he symbolic mechanism is the ‘*bricoleur* of the mind’. It starts from the principle that waste-products of the conceptual industry deserve to be saved because something can always be made of them.. ... A representation is symbolic precisely to the extent that it is not entirely explicable, that is to say, expressible by semantic means”. (Sperber, 1975 p.113).

☞ WWW ☞ 2:38

One thinks here of a phrase of Ernest Gellner’s, that “if a native says something sensible it is primitive technology, but if it sounds very odd then it is symbolic” (cited by Boyer (1996)). Our own view of the world seems so very familiar and so very normal that even professional anthropologists can find it deceptive and impose their own view upon other people’s behaviours.

☞ WWW ☞ 2:39

This chapter originally had a far longer and more expository account of symbolism; one in fact that was too long for the book. It may however be of interest to some readers, and it is therefore included here.

“Symbolism” is a term that many people, as we have already suggested, find exceedingly off-putting, particularly in the context of science. So let us have a brief look at it, and try and

⁴ Sperber is not alone, Luhrmann (2001), in a review of the work of Geertz, comments, “Most anthropologists admire his work immensely, but tumble over themselves to explain all that is wrong with it. (This creates an alarming prospect for a reviewer: to admire is to lack critical edge, to criticise is to lack respect. Alas.)”.

see what is known and thought about it, particularly in relation to left and right. The philosopher, A.N. Whitehead, who perhaps nowadays is best remembered for his comment that Western philosophy was ‘a series of footnotes to Plato’, in 1927 devoted a whole book to symbolism (Whitehead, 1927). He acknowledged immediately that symbolism was now very much less fashionable than it used to be:

“during the mediaeval period in Europe symbolism seemed to dominate men’s imaginations. Architecture was symbolical, ceremonial was symbolical, heraldry was symbolical. With the Reformation a reaction set in. Men tried to dispense with symbols as ‘fond things, vainly invented’, and concentrated on their direct apprehension of the ultimate facts ... [H]ard-headed men want[ed] facts and not symbols. [T]he symbolic elements in life have a tendency to run wild, like the vegetation in a tropical forest. The life of humanity can easily be overwhelmed by its symbolic accessories...”

And yet, despite all of these provisos he goes on to say, “symbolism is no mere idle fancy or corrupt degeneration: it is inherent in the very texture of human life”. More recently the anthropologist Rodney Needham simply described symbolism as “a primary and ineradicable proclivity of thought and imagination” (Needham, 1979 p.70). And indeed once one looks, symbolism pops up everywhere in one form or another. Recently I bought a jar of baby food which was described as containing “Country Chicken”; but what is the force of that word ‘country’? Replace it with its opposite, ‘Urban Chicken’, and it immediately becomes obvious that ‘country’ is meaningless in any strict sense. So its value must be entirely symbolic, somehow telling us that this chicken is healthy, fresh, natural, and so on. And of course in being ‘natural’ another series of symbolic associations will occur, just as if the food is also ‘organic’ or ‘green’. There may be technical meanings which are legalistically correct – and no doubt the chicken did live in the countryside at some time (and there are few chickens living in cities nowadays) – but that is not why it is being described that way.

At one level it is indisputable that symbols are important. If you have got this far in this book then you will already have looked at tens of thousands of little black scribbles, arranged on the page in rows which, if scanned from left to right and top to bottom, and combined using the rules we call ‘English’, will have told you many things and, hopefully, will have made sense to you. But let us just go back a moment. “Made sense”. Let us just look at that second word. ‘sense’. Or ‘SENSE’. Or, even, ‘~~Sense~~’. That little black sinuous squiggle at the beginning that we call an ‘S’ can take many shapes and sizes, but still with an E, an N, an S and another E it becomes ‘sense’. But what is that? And why does it mean ‘sense’ when the letters are in that order but not another? Ultimately all such little squiggles are simply symbols; and likewise their combinations are also only squiggles. Writing down such symbols has a strange effect. It doesn’t actually bring SENSE (or sensibility for that matter) into being in any way. So why should it seem reasonable to say that “SENSE” has a meaning whereas it does not seem reasonable to attach a meaning to “the right hand is sacred”? Although it seems strange to say it, these squiggles that we call letters ultimately have a meaning because we *believe* in them doing so, and because of social conventions. So why is it sensible to believe in some sorts of symbols and not in others?

Although symbolism is at the very heart of anthropology it is extremely difficult to find any universally accepted theory to account for it. Indeed Dan Sperber, an anthropologist who is very influenced by modern psychological theories, has commented, “The fact is that there is very little agreement amongst anthropologists about anything” (Sperber, 1996 p.15); the semiotician Umberto Eco has also almost despaired, “a symbol can be everything and nothing” (Eco, 1984 p.131), with as many definitions as there are authors. He does cite

approvingly Todorov's identification of symbols, "with the whole gamut of indirect and even of direct meanings: connotations, presuppositions, implications, implicatures, figures of speech, intended meaning, and so on." (p.137).

One of the clearest expositions on symbolism is that of Edmund Leach, who devoted a short, elegant book to the topic (Leach, 1976). Although anthropologists and semiologists like to distinguish symbols, signals, signs and natural indices, I will here use the term 'symbols' for all of them. Central to Leach's ideas are not only that symbols are arbitrary (and that is obvious even for the letters of the alphabet or the sounds in spoken language), but that they have no meaning of themselves, only acquiring meaning *in relation to other symbols*. At its most minimal this is apparent even in the binary numeric code which is used by computers: a 1 cannot mean anything unless the system knows also that the 1 is not a 0. Symbols therefore arise from our sense of difference. If objects are not discriminable then they cannot be symbolic. The meaning which is carried by symbols arises from the patterns and relationships that are found between them, so that the binary number '1101' means 'thirteen' because of the particular pattern of the 1s and 0s⁵. Any other pattern, say, '1011' would not mean thirteen but would mean something else, in this case 'eleven'. Although the symbols are entirely arbitrary, these binary numbers and the words in English which correspond to them, have very clear and precise rules concerning their meaning and their manipulation. '1101' minus '1011' can only be '10' in the binary system, just as in English language arithmetic, thirteen minus eleven can only be two. Symbols can therefore be manipulated in a form of algebra, which can be very precise in the case of mathematics. However it is not just mathematical symbols which can be manipulated in such ways — any symbols can. However it is essential that the rules used are appropriate. If for instance we thought that '1101' and '1011' were in the decimal system, then '1101' minus '1011' would be '90' and not '10'. And likewise the series of 1s and 0s inside my computer which correspond to the manuscript of this book are only meaningful when read into a word processing program; read them into a graphics package or a spreadsheet program and meaningless garbage will be the result. It is knowing the appropriate rules and bounds of symbols which makes their use complicated. Leach shows how very readily one can slide across between different sets of rules and in so doing obtain metaphors, such as 'The lion is the king of the beasts'. There are two very different sets of rules here. 'The lion is a beast' is valid in describing the natural world of animals, whereas 'The king is the most powerful man in the state' is a description of a social system. Although there is a sense in which a lion is the most powerful animal in the jungle, it is only metaphorically true to say that the lion is the king of the jungle, because it is combining one statement from one system and one from another. Nevertheless there is a sense in which the metaphor has some truth about it, and that can be seen because most people have little trouble in understanding what the phrase means. That there is truth of some sort in the phrase becomes apparent when we substitute some other social description. Perhaps, "The lion is the lawyer of the jungle", "the lion is the street cleaner of the jungle", or 'the lion is the disc jockey of the jungle'. These phrases do not only seem absurd, there is a sense in which also they seem *false* or untrue. If pushed, for instance, we would probably argue that some other species is the street cleaner of the jungle – ants,

⁵ In binary notation, the left-most number is the number of ones, the next the number of twos, the third the number of fours, the fourth the number of eights, and so on. 1101 is therefore 1 one, 1 four and 1 eight, making thirteen altogether. 1011 in contrast represents 8+2+1=11.

perhaps. Metaphor is not therefore entirely arbitrary, but it has its own internal logic⁶. What species might be the ‘disc jockey of the jungle’ I will leave the reader to think about.

Leach’s view of symbolism emphasises the importance of difference in the definition of symbols, but does not say what particular symbols can or should be used. Although in principle almost anything could be a symbol, if one surveys symbols across historical times and widely different cultures it is quite clear that the frequently used ones are surprisingly restricted in their origins. The most potent and important symbols used in our language, in our myths, and even in those objects of twenty-first century fantasy, advertisements, all come from very obvious origins.

“Symbols are rooted in the common biological nature of man – male and female, birth, death, mating, menstruation, pregnancy, suckling, sickness, elimination, and so forth; in the physical structure of the universe – the seasons, the waxing and waning of the moon, drought and flood, and in the local environment. The same social conflicts within men and between men, such as ambivalent attitudes towards incest, parental authority, and birth and death, are repeatedly represented...”.(Wilson (1971 p.5), cited in Foster (1961)

If you are not immediately convinced of this then it is in part because modern ways of life divorce us from their underlying processes⁷. Think however about the ways that advertisers try and create images for computers or cars or any other modern technology. Either the old, old symbols are somehow attached to the cars or computers themselves or they are attached to the people using the cars or computers. Sex and the fear of death lie at the basis of so many advertisements. As TS Eliot put it,

“Birth, and copulation, and death
That’s all the facts when you come to brass tacks”

Sir Edmund Leach also saw the structure of the human body as being ideal for generating symbols, and in particular for generating opposites:

“the human body is imperfectly symmetrical. Taking the navel as centre, the arms ‘match’ the legs, the genitals ‘match’ the head, the left side ‘matches’ the right side. But these paired dyads are contrasted, not identical; I cannot put a right-handed glove on my left hand. The upper and lower parts of the body, the right and left side are thus specially suited for the representation of related but contrary ideas – e.g. *good/bad*; and so indeed it is...” (Leach, 1976 p.48)

It is not surprising therefore that the right and left hands were ripe for being used symbolically⁸. Now also it is more obvious why it is the right hand that is good and the left

⁶ Often though these relationships are obscure, even to insiders within the system. Nevertheless Leach, emphasises that even though, “Very often the symbolic equations will be highly obscure but, regardless of whether the devotees understand the system or not, there will always be method in their madness” (Leach, 1976 p.39). It is the role of careful anthropological or semiological or critical analysis to find those links.

⁷ “Our way of life has largely excluded manifestations of the natural world from official consciousness, with the result that symbols function for us as metaphors and illustrations, not as potent entities in their own right which are parts of a total representative system” (Hallpike, 1979 p.144).

⁸ Needham (1987b p.213) points out that it is not entirely obvious that the right and left *hands* should be so particularly favoured in symbolic terms, since “...we also possess two feet, two ears, and two nostrils, yet these are not commonly singled out as pairs in the way that hands are. Even our two eyes which are of such physical and social importance, are not usually adopted as emblems of opposition. Swedenborg did so ... but this is an idiosyncratic idea...”.

hand that is evil. As simple anatomical descriptions of body parts, the terms right and left are neutral. However as descriptions of differences in skill and power, the right hand is, for most people, the stronger and more proficient. Applying symbolic algebra metaphorically means that if 'good' is to be applied to one hand and 'evil' to the other then it can only be the right hand that is good and the left hand that is bad. In the words of the psalmist, it is the right hand that does not forget her cunning.

To a psychologist such as myself, the problem with symbols is that they are so often misinterpreted by non-psychologists and they are so often ignored by psychologists. Probably it is the former that is responsible for the latter. Popular books on psychology love to try and tell us 'the hidden meaning of...', and then will follow a list of symbols and their meaning. Dream about this and it means that; behave that way and reveal a secret message about the true self. Always there is some sense in which a particular symbol has a particular meaning, often supported by the phrase, 'the hidden *language* of ...', with the impression that all is required for the language of the symbols to be translated into English. The anthropologist Dan Sperber has strongly contested such a view, and his argument is clear enough. "The argument may be summarised in this way: *if symbols had a meaning, it would be obvious enough*" (Sperber, 1975 p.93, my emphasis).⁹ In other words, symbols don't *have* meaning, we *give them* meaning. And in so doing, much of what can happen is idiosyncratic and personal to the individual themselves, with dreams perhaps being the most extreme example of all. Dreams may be interpretable with the help of a psychoanalyst who knows their client well, but the interpretation will bear no relationship to that of another client with the identical dream.

Sperber views symbols as an inevitable part of the functioning of the human mind.¹⁰ Always the mind is struggling to make conceptual sense of the world, but it is not always the case that such sense can be found. But minds don't stop working at that point. Instead the symbolic system takes over, collecting, storing and putting together into patterns in the hope that one day, somehow, meaning will emerge¹¹. In trying to store such miscellaneous material, each mind will approach it differently. Sometimes there are features which are nigh on universal, and everyone will do it the same (perhaps, say, information about day and night, or men and women). Other aspects are more specific to people from particular cultures or belief systems (for instance, consider the modern meaning of Christmas to someone not from a Western culture); and finally there are parts of the symbolism which are completely individual, so that those of one person bears little resemblance to those of any other (one can imagine this by thinking about trying to find someone else's bank statements or whatever in

⁹ Sperber says also, "Symbolicity is therefore not a property either of objects, or of acts, or of utterances, but of conceptual representations that describe or interpret them." (p.112).

¹⁰ He is not alone amongst anthropologists, Needham for instance saying that, "the symbolic opposition of right and left, and a dualistic categorization of phenomena of which this opposition is paradigmatic, are so common as to seem natural proclivities of the human mind". (Needham, 1960 p.123).

¹¹ "I clarify my hypothesis: the conceptual mechanism never works in vain; when a conceptual representation fails to establish the relevance of its object, it becomes itself the object of a second representation. ... [T]he symbolic mechanism is the '*bricoleur* of the mind'. It starts from the principle that waste-products of the conceptual industry deserve to be saved because something can always be made of them.. ... A representation is symbolic precisely to the extent that it is not entirely explicable, that is to say, expressible by semantic means". (Sperber, 1975 p.113).

their home filing system)¹². The filing system on my desk or in my computer has an internal system, I place things in particular places, in relation to one another, but there is little common in the way I will do it or in the way you will do it. Individuals sharing a culture will agree on certain aspects of the way they do things (and doctors, for instance, mostly keep their clinical notes in a very standard format precisely so other doctors can quickly make sense of them). And occasionally aspects of the way we organise the world are universal – there are no societies for instance which do not organise their lives in terms of the year and the cycle of the seasons. Often we know that things are being done correctly without being able to say *why* they are being done in a particular way, or what the underlying rules are.

Sperber describes several examples of left-right symbolisms which work in precisely such ways. Observing the Dorze in the Sudan, where he was doing fieldwork, he noticed a ceremony in which,

“Along comes a group of dignitaries who ... undertake a circling of the market place in an anticlockwise direction. I enquire: the tour cannot be done in the other direction. Why? It is the custom. But then? One turns in the direction of the sun. How is that? Well, from right to left.”¹³

Like so many aspects of symbolism and social organisation, explanation breaks down, although the system is clear enough to those who are doing it. And outsiders can also learn to classify in the same way¹⁴. We are no better. Sperber, who is French himself, also mentions two lateral symbolisms in the *code de politesse*, the handshake and the use of a knife and fork, which have been “inflicted on each of us from infancy”. He points out that the handshake has what might be called its own ‘myths of origin’, stories we have invented to make sense of our behaviour, “one shows that one is not armed; by extending the right hand, one makes it impossible to hit the other”. As far as using a knife and fork is concerned, again there are half-hearted explanations and justifications, but these are very superficial, often merely saying that “... it is polite to ... hold one’s knife in the right hand”, without explaining why it is polite and what politeness means. Although there are rules underlying these behaviours, and these are acquired through learning, there is rarely explicit teaching, and there is no explanation of for instance, “the fact that when finished eating one puts the knife and fork together parallel towards the right rather than towards the left” (Sperber, 1975 pp.21-22; Sperber, 1975 pp.21-22).

¹² Sperber, for instance, in talking about myths, Sperber says that there is, “No meaning in universal myths, but broadly, a universal focalisation, a cultural evocational field, and an individual evocation” (Sperber, 1975 p.140).

¹³ Even ignoring the fact that anticlockwise and from right to left are saying precisely the same thing, Sperber also points out that given the latitude of the Sudan, “... there are no more reasons, between the Tropic of Cancer and the Equator, for thinking that the sun turns from right to left rather than from left to right” Sperber, 1975 p.3.

¹⁴ Sperber points out that, “... up-down, cold-hot, feminine-masculine, right-left, nature-culture, etc. As in the case of Freudian symbolism, we are still at the level of a trivial party game. However many societies do play this game, dividing things without laterality in left and right ..., and things without verticality into up and down. Thus the Dorze divide the whole universe into cold and hot and into senior and junior, following principles I must have internalised intuitively since – I repeatedly tested this – I apply them as they do, without being able yet to make them explicit” (Sperber, 1975 p.59).

References

- Anonymous. 1916, *The Jewish Encyclopaedia*, New York: Funk and Wagnalls.
- Baker-Cohen, K. F. 1961, "Visceral and vascular transposition in fishes, and a comparison with similar anomalies in man", *American Journal of Anatomy*, **109**, 37-55.
- Bannister, D. & Fransella, F. 1971, *Inquiring man: the theory of personal constructs*, 2 edn, Harmondsworth: Penguin.
- Berlin, B. & Kay, P. 1969, *Basic color terms: Their universality and evolution*, Berkeley: University of California Press.
- Blake-Coleman, B. C. 1982, "The left heresy and directional preference in early science and technology", *Folklore*, **93**, 151-163.
- Bourdieu, P. 1977, *Outline of a theory of practice*, Cambridge: Cambridge University Press.
- Bourdieu, P. 1990, *The logic of practice*, Cambridge: Cambridge University Press.
- Boyer, P. 1996, "Symbolism," pp. 860-861 in *The Social Science Encyclopedia*, A. Kuper & J. Kuper, eds., London: Routledge.
- Braunlich, A. F. 1936, "'To the right' in Homer and Attic Greek", *American Journal of Philology*, **57**, 245-260.
- Butler, A. J. 1898, *Bismarck: The man and the statesman; being the reflections and reminiscences of Otto Prince von Bismarck*, London: Smith, Elder and Co.
- Cassell, J. 1998, *The woman in the surgeon's body*, Cambridge, MA: Harvard University Press.
- Cook, T. A. 1914, *The curves of life*, Constable (Reprinted in Dover Books, 1979): London.
- Copeman, S. M. 1919, "Experiments on sex determination", *Proceedings of the Zoological Society*, **1919**, 433-435.
- Crew, F. A. E. 1952, in *Marshall's Physiology of Reproduction, Volume II*, 3 edn,
- Das, T. 1945, *The Purums: An old Kuki tribe of Manipur*, Calcutta: University of Calcutta Press.
- Dawson, R. 1909, *The causation of sex*, London:
- Domhoff, G. W. 1968, "But Why Did They Sit on the King's Right in the First Place?", *Psychoanalytic Review*, **56**, 587-596.
- Doncaster, L. & Marshall, F. H. A. 1910, "The effects of one-sided ovariectomy on the sex of the offspring", *Journal of Genetics*, **1**, 70-72.
- Dumont, L. 1980, "On value", *Proceedings of the British Academy*, **66**, 207-241.
- Dumont, L. 1979, "The anthropological community and ideology", *Social Science Information*, **18**, 785-817.
- Durkheim, E. 1995, *The elementary forms of religious life (translated by Karen E Fields) [1912]*, New York: The Free Press.
- Eco, U. 1984, *Semiotics and the philosophy of language*, London: Macmillan.

- Fabbro, F. 1994, "Left and right in the Bible from a neuropsychological perspective", *Brain and Cognition*, **24**, 161-183.
- Firth, R. 1975, "The right hand and the wrong", *Times Literary Supplement* 190-191.
- Foster, M. L. 1995, "Symbolism: The foundation of culture," pp. 366-393 in *Companion Encyclopedia of Anthropology*, T. Ingold, ed., London: Routledge.
- Fowler, A. 1971, *Milton: Paradise Lost*, London: Longman.
- Freud, S. 1976, *The interpretation of dreams*, Harmondsworth: Penguin Books.
- Granet, M. 1973, "Right and left in China (originally published in French in 1933)," pp. 43-58 in *Right and left: Essays on dual symbolic classification*, R. Needham, ed., Chicago: University of Chicago Press.
- Hallpike, C. R. 1979, *The foundations of primitive thought*, Oxford: Clarendon Press.
- Harnad, S. R. 1987, "Category induction and representation," pp. 535-565 in *Categorical perception: The groundwork of cognition*, S. Harnad, ed., Cambridge: Cambridge University Press.
- Hertz, R. 1960, *Death and the right hand*, Aberdeen: Cohen and West.
- Kelly, G. A. 1955, *A theory of personality: The psychology of personal constructs*, New York: W.W. Norton.
- King, H. E. 1909, "Studies on sex determination in amphibians II", *Biological Bulletin*, **16**, 27-43.
- King, H. E. 1911, "The effects of semi-spaying and of semi-castration on the sex-ratio of the albino rat (*Mus norvegicus albinus*).", *Journal of Experimental Zoology*, **10**, 381-392.
- Kraig, B. 1978, "Symbolism in burial orientations among early Indo-Europeans", *Journal of Indo-European Studies*, **6**, 149-172.
- Leach, E. 1976, *Culture and communication: The logic by which symbols are connected*, Cambridge: Cambridge University Press.
- Lloyd, G. E. R. 1966b, *Polarity and analogy*, London: Cambridge University Press.
- Luhmann, T. M. 2001, "The touch of the real", *Times Literary Supplement*, **12th January**, 3-4.
- Mauss, M. 1990, *The gift: The form and reason for exchange in archaic societies*, London: Routledge.
- McManus, I. C. 1979, *Determinants of laterality in man*, University of Cambridge: Unpublished PhD thesis.
- Needham, R. 1958, "A structural analysis of Purum society", *American Anthropologist*, **60**, 75-101.
- Needham, R. 1960, "The left hand of the Mugwe: An analytical note on the structure of Meru symbolism", *Africa*, **30**, 20-33.
- Needham, R. 1973, *Right and Left: Essays on dual symbolic classification*, Chicago: University of Chicago Press.
- Needham, R. 1979, *Symbolic classification*, Santa Monica, California: Goodyear.
- Needham, R. 1987b, *Counterpoints*, Berkeley, CA: University of California Press.
- Palmer, S. E. 1978, "Fundamental aspects of cognitive representation," pp. 259-303 in *Cognition and categorization*, E. Rosch & B. B. Lloyd, eds., Hillsdale, NJ: Lawrence Erlbaum.
- Parkin, R. 1996, *The dark side of humanity: The work of Robert Hertz and its legacy*, Amsterdam: Harwood.

- Paskauskas, R. A. 1993, *The complete correspondence of Sigmund Freud and Ernest Jones 1908-1939*, Cambridge, MA: Harvard University Press.
- Pearsall, R. 1971, *The worm in the bud*, Harmondsworth: Penguin.
- Peck, A. L. 1953, *Aristotle: Generation of Animals*, Cambridge, MA: Loeb.
- Plessner, M. 1970, "New and old topics relative to left and right," pp. 107-107 in *Folklore Research Center Studies: Volume 1*, D. Noy & I. Ben-Ami, eds., Jerusalem: Magnes Press.
- Rackham, H. A. 1983, *Pliny: Natural History, volume III*, Cambridge, MA: Loeb.
- Rigby, P. 1966a, "Dual symbolic classification among the Gogo of central Tanzania", *Africa*, **36**, 1-16.
- Rosch, E. 1978, "Principles of categorization," pp. 27-48 in *Cognition and categorization*, E. Rosch & B. B. Lloyd, eds., Hillsdale, NJ: Lawrence Erlbaum.
- Sattler, J. B. 2000, *Links und Rechts in der Wahrnehmung des Menschen: Zur Geschichte der Linkshändigkeit*, Donauwörth: Auer Verlag.
- Slobodin, R. 1997, *W.H.R. Rivers: Pioneer anthropologist, psychiatrist of The ghost road*, Stroud: Sutton.
- Sperber, D. 1975, *Rethinking symbolism*, Cambridge: Cambridge University Press.
- Sperber, D. 1980, "Is symbolic thought prerational?," pp. 25-44 in *Symbol as sense: New approaches to the analysis of meaning*, M. L. Foster & S. H. Brandes, eds., New York: Academic Press.
- Sperber, D. 1996, *Explaining culture: A naturalistic approach*, Oxford: Blackwell.
- Sylvester, D. 1999, "Serra in Bilbao", *Modern Painters*, **12 (3)**, 26-33.
- Tcherkézoff, S. 1983, *Le Roi nyamwezi, la droite et al gauche*, Cambridge: Cambridge University Press.
- Tcherkézoff, S. 1987a, *Dual classification reconsidered: Nyamwezi sacred kingship and other examples*, Cambridge: Cambridge University Press.
- Whitehead, A. N. 1927, *Symbolism: Its meaning and effect*, New York: MacMillan.
- Wieschoff, H. A. 1938, "Concepts of right and left in African cultures", *Journal of the American Oriental Society*, **58**, 202-217.
- Wile, I. S. 1934, *Handedness: Right and left*, Boston: Lothrop, Lee and Shepard.
- Wilson, M. 1971, *Religion and the transformation of society: a study in social change in Africa*, Cambridge: Cambridge University Press.
- Winterson, J. 1997, *Gut symmetries*, London: Granta Books.