



fig. 1 An Egyptian scarab: 1570 BC - 1298 BC (18th Dynasty) made of steatite (soapstone), from Abydos in Upper Egypt. 1.3 cm. Modelled on the dung beetle or *Scarabaeus sacer*, the inexpensive, easily-worked soapstone was covered with a greenish-coloured glaze, the better to resemble its iridescent living counterpart. On the reverse of the scarab on which is written the words ‘“Scarab begets the existence of Amun” (*mn hpr im n*)’, which means: ‘an amulet through the name of the god Amun: the magic of the sign will give full protection to the bearer of this scarab’. Strongly associated with the sun (second only in importance to the waters of the Nile in this farming-based civilisation), tokens such as these served to reinforce a sense of belonging to a higher, invisible order, which controlled life and death. Arguably, to the extent that it contributed to an individual’s sense of identity, it materially contributed to that individual’s will to live and survive - an adaptive objective.



fig. 2 This denarius is a medium-value silver coin struck after 7 BC and before 2 AD. The profile of Augustus (left) is identified with the words 'CAESAR AVGVSTVS' reminding all that he was the murdered Julius Caesar's great-nephew, adopted son, and legitimate successor. This image and these words appear here, as on *all* coinage in the Empire, compared with the different profiles that appeared on coins in different places during the Republic. The overtly political content extends even to the laurel crown he wears - a symbol given only to victors in battle. Augustus's protracted military campaigns had secured the comparative peace of his *Pax Romana*, for which many were grateful. On its reverse too (right), there is a political message relating to his intended successors as Emperor, Gaius and Lucius Caesar, his own adopted sons. Of course, at another level, any coin including this one, can bear any number of day-to-day meanings, wholly independently of any intended by its designers.



fig. 3 The so-called Ardabil Carpet, completed in 1539-1540 in northern Persia (Iran). It can be seen to further the causes of genetic replication and inclusive fitness, to the extent that it had power as a symbol of the legitimacy of the Safavid dynasty, of which Shah Tahmasp was the head. Further, it served to articulate something of the relationships Tahmasp wished to establish with his courtiers, symbolising both his spiritual and secular credentials - which in turn would empower him in his attempts to fend off the hostile attentions of his numerous enemies.



fig. 4 Detail of the Ardabil Carpet. Despite the fact that this carpet represents the accumulated labour of hundreds of individuals (probably women), in appraising and appreciating its design, we respond to it *as if* it were an act of individual creation, and *as if* the tacit social intelligence it conveys indicates an individual to whom we would respond positively.

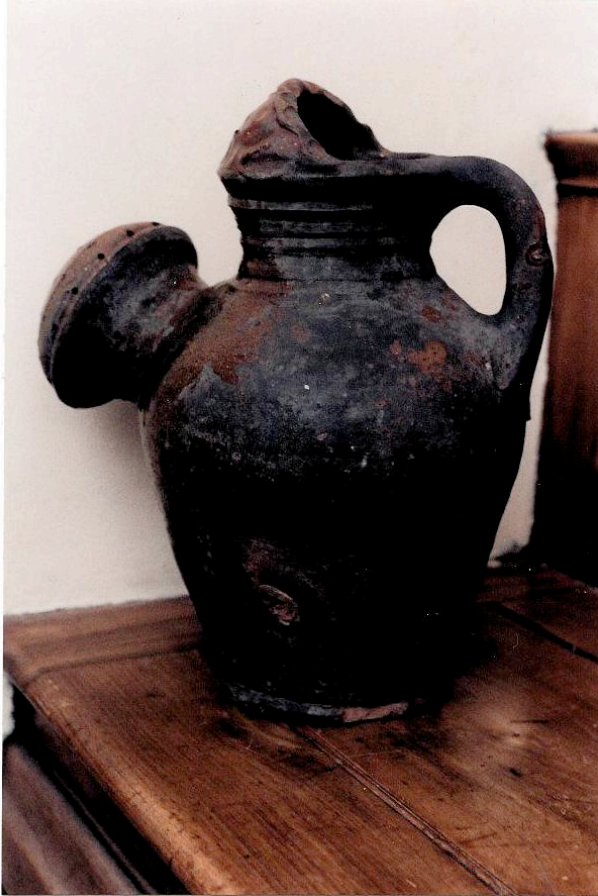


fig. 5 An English, seventeenth-century watering-pot. The main body of the watering pot is smooth. Close examination reveals it was smoothed over, after throwing, with a wooden or metal 'rib' to remove the ridges otherwise left by the potter's fingers. Yet the practical advantages of this smoothness are virtually non-existent. Even if the time invested were a matter of seconds for each pot in the batch, cumulatively - as any hard-pressed potter using the daylight available would have known - it would mean fewer pots made in a given period of time. This suggests that smoothness was among the qualities which potters judged purchasers would expect - and which vendors would therefore have to offer - even of such a low status tool.



fig. 6 A late twentieth-century wood screw. A perfect, commonplace example of an artefact where no immediate symbolic meaning was intended by its creators, and where no-one would ordinarily expect it to bear one in ordinary use. Nonetheless, I argue that the aesthetic and technical pleasures it delivers are based on evolved, adaptive, sensory and perceptual biases. Thus, even this banal, modern, useful artefact can be seen to exhibit characteristics which have emerged over millennia, from the continuous coincidence between that which is judged technically satisfying (and therefore both useful and economic - and therefore adaptive) and that which is aesthetically pleasing. Of course, in an age of cross-headed screws, screws such as this - in some contexts - have come to symbolise the hand-made.



fig. 7 Even when we know the body of the BMW Z4 has been stamped from sheet steel by machines and is probably unmodified, if not quite untouched by human hand, it is still, partly, this vocabulary of *behaviour* which we employ in appraising its aesthetics. Thus, at the level of emotional pleasure, we admire the *boldness* of its curves and scoops, apparently cut by a confident, unseen hand wielding with skill and intelligence a non-existent blade, slicing with precision through a block of some rationally impossible material.

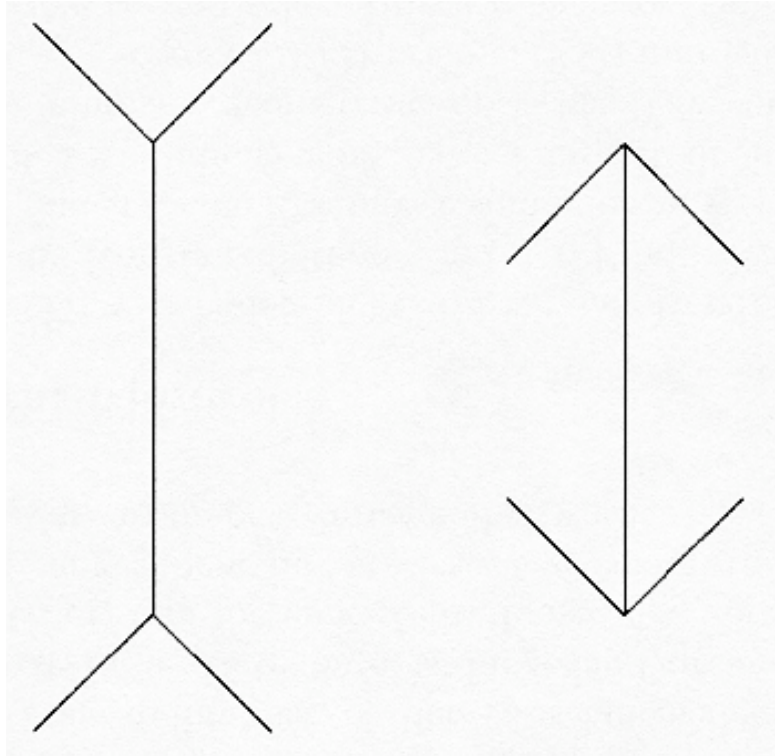


fig. 8 The Müller Lyer Illusion: Despite the fact that we may be told - and therefore, know - that the two lines are the same length, the presence of the 'arrows' at the ends of each line creates an impression that the one on the left is longer than that on the right. Such perceptions are - according to Jerry Fodor - caused by a *poverty of stimulus*; that is, the brain, evolved in order to make rapid sense of the physical environment. At the level of perception, the brain therefore *infers* (that is, adds to incoming data) what it believes is there even when, at the level of cognition, there is knowledge that reality is otherwise. This apparent 'barrier' between the one level and the next (perception and cognition) supports Fodor's model of a modular brain, that is, a brain which - in part - is made up of discrete, functionally-specific, evolved mechanisms.

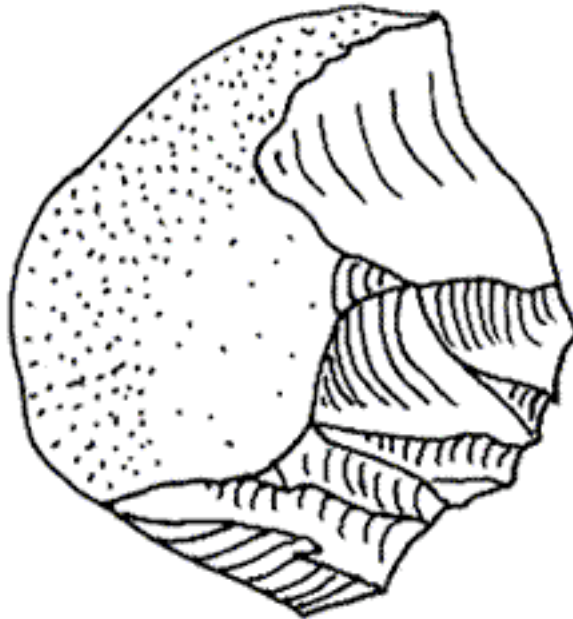


fig. 9 The earliest archaeological evidence of tools is in Ethiopia: modified stones and pebbles and flint flakes (so-called 'Oldowan' tools), the oldest of which date from 2.5 million years ago. Some have argued that the archaeological record is incomplete, in that tools made from wood or other organic materials may have predated these and perished. Chimpanzees - our closest primate relatives - use a limited range of tools. Tool use might, therefore, stretch back six million years or earlier, before we shared a common ancestor with them.

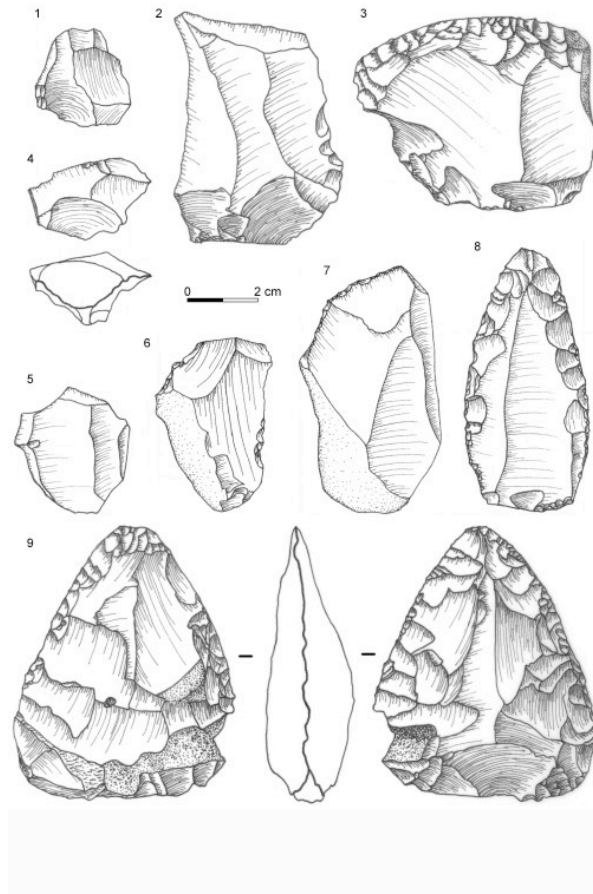


fig. 10 We are all descended from 'Social' Engineers: These Acheulian handaxes, first made 1.4 million years ago, represent one stage in the modification of the found. It is thought they marked important cognitive advances. The maker needed to have a shape in mind and it has been shown that they were potentially very effective cutting tools. They might also have had some social significance (as an aspect of courtship). Intention, utility and social significance are all characteristics of design today.



fig. 11 The puzzle of Acheulian handaxes. It has been demonstrated that these were - potentially - highly effective tools; yet archaeologists have been somewhat mystified that they are often found in considerable quantities more or less unused (and still sharp enough to cut flesh). Mithen and Kohn have argued that, quite apart from their practical uses, axes may have been made by male hominids in front of females they were trying to woo, with the intention of demonstrating their skill and intelligence. If successful, the axe would be immediately discarded as, they argue, only the immediate witnessed performance would deliver the desired effect. Mere possession and implication of manufacture (in the absence, probably, of language) would not work.



fig. 12 The Furze Platt Giant (left) was named after the place in the Thames Valley where it was found in 1919. While not obvious from this photo, it is - at more than 12 inches (321mm) long - exceptionally large, to the extent that it is hard to imagine it had any practical use whatever. Mithen and Kohn cite the few examples of axes such as this (like that found at Shrub Hill, on the right) in support of their theory.



fig. 13 Things created reveal, predict and define behaviour: To survive, it is essential for individuals to predict who might be friend and who foe. In this respect, observation of behaviour is the 'Gold Standard'; linguistic reports of behaviour may or may not be reliable; by contrast, in the past, tangible records - like this deftly-fashioned, 18,000 to 22,000-year-old Upper Solutrian (Upper Palaeolithic Period) flint blade - were harder to fake. With ever increasing levels of sophistication, created objects both embodied and could be interpreted as *accumulations of behaviour* embodying *tacit social intelligence*. They indicated not only foraging and making skills, but signalled intellect and character. Once created, merely being associated with an object identified one with the behavioural characteristics it embodied. This remains true today.

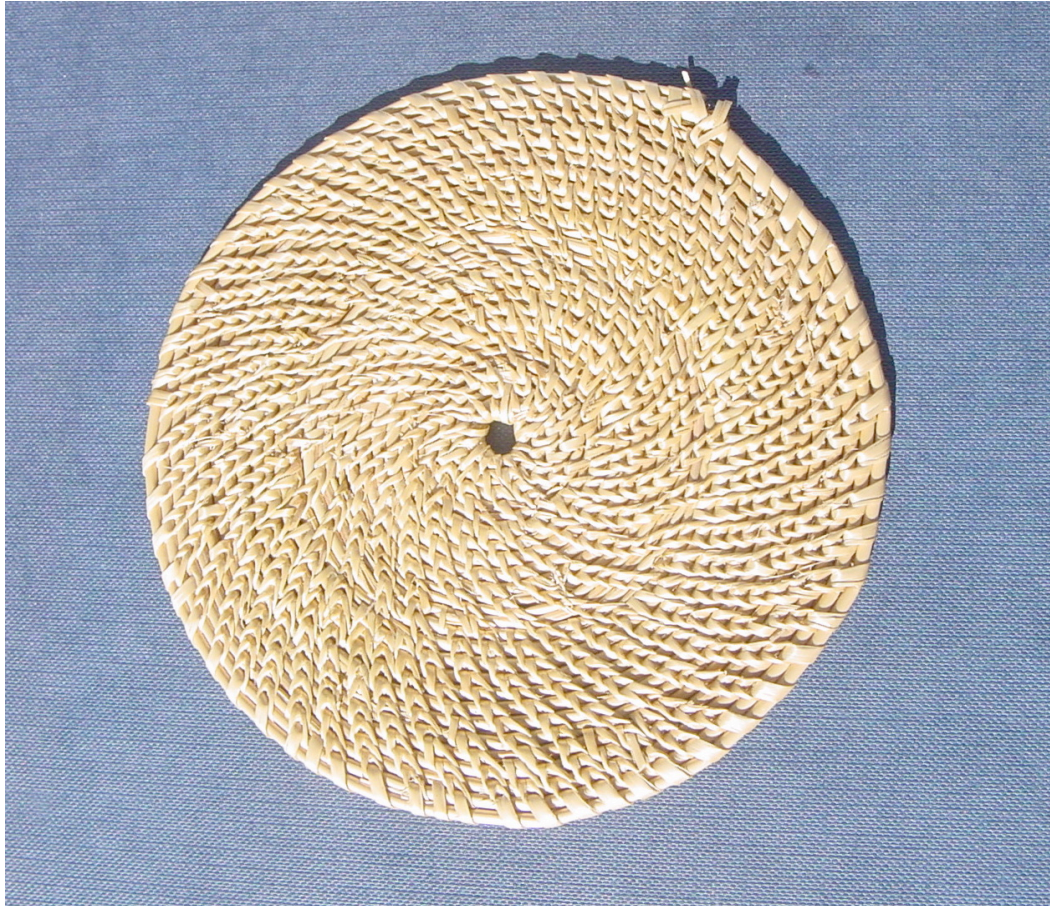


fig. 14 Pattern as a by-product of process: a tablemat from India. It is argued that sensitivities towards pattern - and many other physical or visual characteristics of artefacts - have arisen as a result of the coincidence of a sequence of evolved imperatives connected with survival or reproduction. The regularity, pattern and symmetry exhibited here resemble those found in organic resources (principally food) when in good condition. The same characteristics in a created object testify to the skill, diligence and intelligence of the creator - tacit social data, in other words. Aesthetic pleasure at such features is, it is argued, evolved, in that it came as a 'pay-off', confirming adaptive behaviour.



fig. 15 Most of the things we create are smooth and symmetrical: For millions of years our ancestor species favoured smoothness, symmetry and other physical characteristics in food (not to mention sexual partners), because it enabled them to discriminate between the sound and healthy and the diseased, or otherwise out-of-condition. Smoothness and symmetry were genetic fitness indicators. On average, most of what we create now is smooth, symmetrical or embodies other pleasing proportional relationships.



fig. 16 Darwin wrote in *The Origin of Species*: 'Flowers and fruit have been rendered conspicuous by gaudy colours in contrast with the green foliage, in order that the flowers might be easily seen, visited, and fertilised by insects, and the seeds disseminated by birds.' Red promises food.



fig. 17 As these everyday examples show, the red of blood (and of fire?) has led us to persist in using the colour as a warning signal. Red means danger.



Demonstrierende Neonazis*, Deutsche Großmarktsnacht



fig. 18 Red is still routinely used to refer to things which were once critical to survival: danger and violence - hence, military flags; food (fruit, meat); and plenty in the more abstract form of betokening good fortune in China, as these candles show. Reproduction is referred to (in principle, at least) by the red light of the brothel or (in the 21st century) the pornographic website.



fig. 19 Green is one of the most ubiquitous colours on the planet. Its continued association with plant life is almost too obvious to warrant notice - except that (unless one maintains it is presently maintained by culture alone) it reinforces the notion that some of our uses of colour are very deep-rooted indeed, while allowing that some seem not to be and colours with strong associations can, nevertheless, be employed without reference to them.



fig. 20 A commonplace example of evolved aesthetics: Flowers indicate the arrival of fruit, as here, in this courgette plant. Recognising them (and taking pleasure in that recognition) contributed to the chances of survival of individuals belonging to species from which we are descended. We seem - still - to find healthy flowers attractive, even in image, and presents of (carefully-chosen) flowers continue to articulate countless social relationships - including potentially reproductive ones.



fig. 21 'Yellow is the colour of joy!' said Oscar Wilde; yet in nature, apart from the positive indications of fruit or flowers, there are countless examples of yellow as a warning of the danger of, say, poisoning - or stinging, in the case of this hornet. Yellow figures today in both pleasurable and alarming contexts.

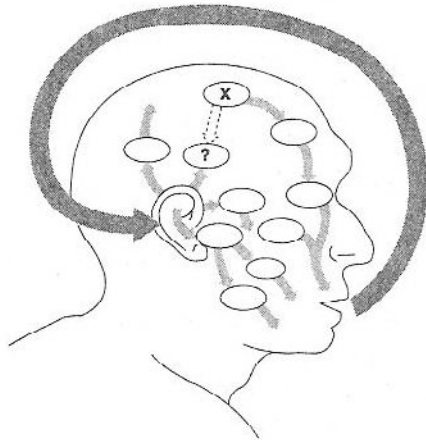


fig. 22 Dennett has argued that one of the major uses of language was not as a form of communication, but as mode of thought. The circuitry of the brain was gradually evolving. Suddenly, by means of language, the individual could literally talk to herself - thus short-circuiting the wiring of the brain from mouth to ear, thus pushing the thought processes out into the environment. Mithen has suggested, further, that the attribution of meaning and significance to artefacts might similarly have been used as a mode of thought (with the possibility, like language, of becoming a mode of communication).



fig. 23 Artefacts physically embody *accumulations of behaviour*, as the top of this London pillar-box clearly demonstrates. It reveals: the behaviour of those who conceived of and designed it; of those who, in the first instance, made it; of those who have painted it red, initially, and - self-evidently - on numerous occasions since; the behaviour of those who have repeatedly used it in the manner of a shelf to support something - the scratches are particularly expressive of the types of movements that have been made; and lastly, the behaviour of whichever authorities have allowed it to remain unpainted for some time. Such rich *tacit social data* surrounds us all the time although, inevitably, we only occasionally pause to detect it, because it is only occasionally relevant to our successful 'social orientation'.

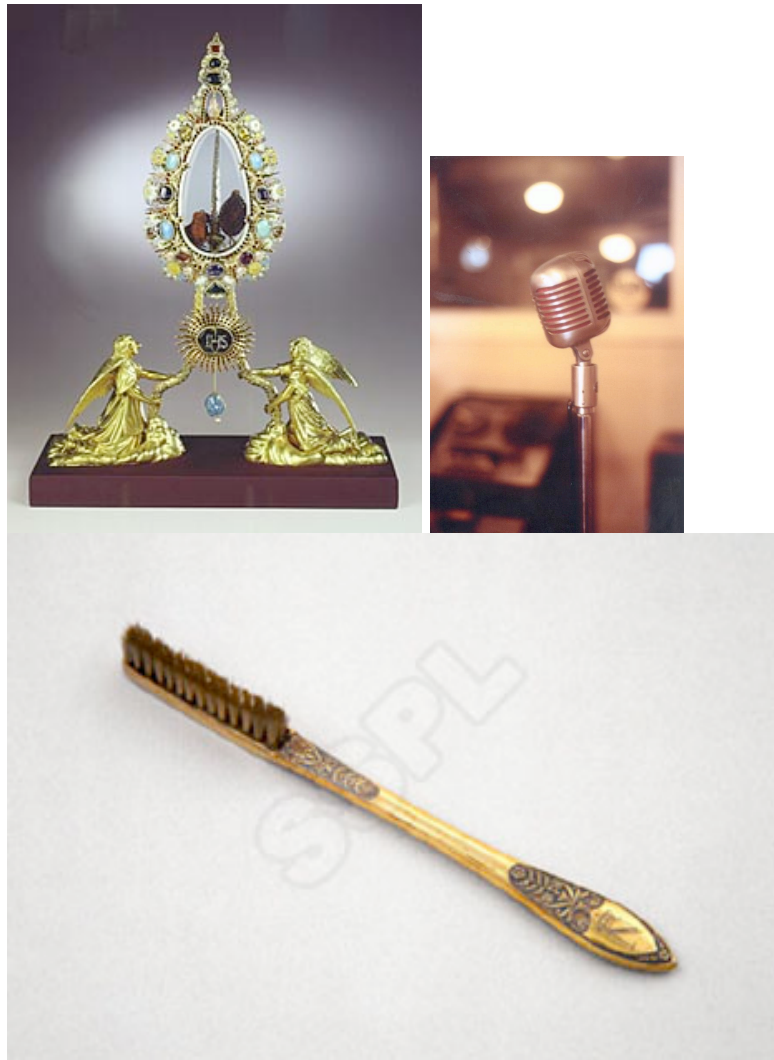


fig. 24 The nail in this 17th century German reliquary (top left) would have begun life just as 'symbolically invisible' as the wood screw. Yet the claim that it secured the right hand of Jesus to the cross has transcended any conventional mechanism by which symbolic meaning might be bestowed. Napoleon Bonaparte's toothbrush and a microphone (allegedly) 'used by Elvis' might each, with time, have come to symbolise the periods in which they were created but - as with the nail from the cross - overwhelming social data transforms the symbolic significance which they can support.



fig. 25 My Apple iBook laptop computer on the table in my study, at home. It is symmetrical in several dimensions. It presents both vertical and horizontal symmetry, while individual elements of it - such as the screen, the keyboard and 'mouse pad' - exhibit still further examples of the ubiquitous symmetrical aesthetic. Overall, the three-dimensional curved surfaces directly - and in this case, self-consciously - resemble those found in nature.



fig. 26 The visible 'dots' which sit at the centre of the space formed by the semicircles at the curved ends of the 'click' bar.



fig. 27 The symmetries and carefully-organised proportional relations testify to an attention to detail - a quality to be valued in anyone (or group of people) responsible for supplying one with a complex tool such as this.



fig. 28 In terms of pattern - that is, elements regularly repeated, such that visually they have an aesthetic impact - the keyboard's keys represent the most conspicuous example, even if this is actually a by-product of the pre-existing constraints of the QWERTY key configuration, rather than an overtly chosen example of pattern as such. Even so, the function keys surrounding the QWERTY keys have been so arranged that the entire keyboard forms a regular, symmetrically divided, patterned rectangle.



fig. 29 Regular pattern, reminiscent of good condition in the make-up of organic objects and, in hand work, valued as indicative of economy and skill, still holds an attraction for us, even when we know the work is produced by machine. Here, the value of keeping the regular appearance of the pattern - the pattern of ventilation slots running across the back of the keyboard half of the computer - has been judged sufficiently advantageous to warrant the casting of 'sham' slots in parts of the plastic where (for reasons of mechanical integrity, one imagines) there are no actual holes, but solid plastic instead.



fig. 30 The Apple logo - here, a glossy bulge breaking the smooth surface (with a bite taken out of it, which must, one supposes, have been taken by oneself) - is but one among many references to food: the shape is another; the colour, which was marketed as 'tangerine' ('cranberry' was also an option). If the iBook is a fruit, it is in good condition, and ripe for the eating, and in this way, unlike its rivals, it throws out overt links to both the beauties and the bounties of the organic world, embracing the sensuality of food on the way.



fig. 31 Curvy Nature: Nature is increasingly appreciated by city dwellers through image, rather than from first-hand experience. In such images - as here with this section of a nautilus shell - the superficial equating of the curved with the organic figures as a recurrent element. Interestingly, in this case, the shell exhibits the proportional relationships of the Golden Section.



fig. 32 By 1998 the cases of computers - typified by IBM's models - were conventionally crisp, rectilinear grey or beige plastic casings, smooth or uniformly textured; these qualities signalled seriousness, technical competence and reliability - invaluable qualities in business transactions (IBM's reputation rested on business computing), but insufficient on their own to sustain a 'rewarding, enjoyable, personal relationship'.

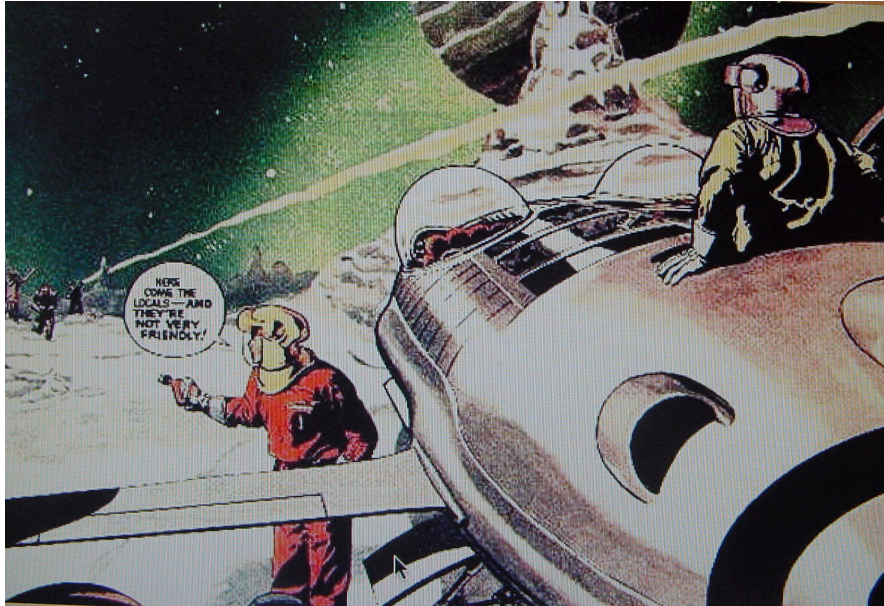


fig. 33 Among the references to technology in the iBook, the playful, slightly camp mid-twentieth-century science fiction (such as this 1965 illustration for one of Dan Dare's adventures in *The Eagle*) was well to the fore. Once again, this was a calculated emotional pitch to Apple customers, for whom technology, as expressed in the IBM style vocabulary, was either too bland or too 'corporate', or both. If the iBook is a machine, it is an ironical, light-hearted one. Technology is represented as a branch of innocent, popular entertainment.



fig. 34 The accumulated dirt on the mouse pad testifies to six years' constant use - and a nervousness on my part about how - safely - one ought to clean such things.



fig. 35 The cracked handle...



fig. 36 Natural 'beauty' often equates with 'well-made': So deeply-ingrained is this ability to appraise individually-created artefacts that, as with things made by many, or by machine, we persistently deploy it where - logically - it ought not to pertain. Thus we treat objects, such as this scallop shell, *as if they were artefacts*. In other words, we respond well if it seems the *tacit social intelligence* speaks of a maker we would choose as an ally. *There is* (setting supernatural explanations aside) *no maker!*



fig. 37 Roland Barthes' analysis of the Citroën DS 19 allowed that those investigating it might want to explore it physically '...with an amorous studiousness: it is the great tactile phase of discovery, the moment when visual wonder is about to receive the reasoned assault of touch...The bodywork, the lines of union are touched, the upholstery palpated, the seats tried, the doors caressed, the cushions fondled.' He also allowed that the 'wondrous shape' of the bodywork implied that its mode of manufacture might be supernatural.