## 5.	How humans engage with artefacts: a provisional model

The purpose of this chapter is to articulate a model describing the manner in which human engagement with artefacts is built out of our evolutionary past. There are four parts: in the first, I explain how the model proposed here differs from those of Miller and Eckart Voland; in the second, I summarise the key points of the argument thus far and develop them somewhat; in the third, I describe the model; and in the last, I test the model against the evidence drawn from a near-contemporary artefact: my Apple iBook computer.

### 5.1	*Shortcomings of Miller's position*

Geoffrey Miller writes:

From the viewpoint of fitness indicator theory, maybe our aesthetic preferences evolved to favor art-works [and, by implication, the aesthetic, 'useless' characteristics of useful artefacts] that could only have been produced by a high-fitness artist. Art-objects may be displays of their creator's fitness, and may be judged as such. As with the sexual ornaments on our bodies… perhaps beauty boils down to fitness.[1]

Moreover, he suggests that '…language, art, music, humor, acting, mimicry, metaphor, sports, games, ritual, myth, ideology, religion, politics and science' fall 'under the rubric of courtship behaviour'.

In seeking to find evolutionary explanations for the phenomena in the above list, Miller asserts that it is sexual selection, rather than natural selection, which should be looked to as their source. His proposal is that they have their roots in the courtship behaviour of males, who are then selected from by females. Further, these behaviours are successors to the Acheulian handaxes, in that they are 'costly' signals, as well as indicators of fitness; that is, they are difficult to achieve, and give an indication of

desirable qualities in the suitor (strength, intelligence, wit, good company, etc.). What we witness today in these fields has, he argues, been the product of female mate choices over the millennia.[2] Thus they arise by sexual, rather than natural selection, and as such, there is no need to look for the increases in economy or efficiency which characterise the changes arising from the latter. In modern life, he points to the gyrations of the rock guitarist, or the outputs of young, male fine artists (in comparison to the dearth of women artists or - so he asserts - art of worth from male artists later in their careers).

From the perspective of the argument being mounted here, Miller's remit is simultaneously too universal, too narrow and too imprecise.

It is too universal in the sense that he offers it as a 'catch all' for the phenomena he lists, whereas there are plausible, well-argued alternative explanations which cannot easily be dismissed. For example, in chapter three I cited the archaeologist, Mithen's, argument, based on actual objects (rather than imagined ones) found from Upper Palaeolithic sites. In it, he suggested that aesthetically fashioned artefacts, including wall paintings and relief sculpture, served 'functional' purposes in storing information about resources; and congruent evidence was cited concerning the content of countless myths among modern hunter-gatherers. The implication of Miller's argument would seem to be that courtship involved the composing and recitation of such myths as the group supported, to a prospective mate; or the creating of artworks in inaccessible caves, to which, presumably, the prospective partner was led, that she might be impressed and won. Perhaps, sometimes, this happened; but to offer it as a general rule seems unnecessarily tortuous, compared with a more straightforward account based primarily on natural, rather than sexual selection, whereby the costs of artworks were offset by the extent to which they enhanced the effectiveness of exploiting resources, and thus provided (among other reasons, as will be shown) an adaptive advantage, and were selected for. The alternative is to view the practical, resource efficiencies delivered by the

'art' of art and design as no more than a by-product of the process of sexual selection, which would seem miraculously fortuitous.

The narrowness and lack of precision are related to one another. For the most part, Miller's arguments (like Thornhill's and others) are mounted in terms of 'art', 'beauty' and aesthetics, with the emphasis very much on those expressions of human creativity which, traditionally, have been discussed in terms of these abstractions. Few real examples are cited, with the consequence that the reader is often free to imagine evidence which supports Miller's position. (Indeed, Miller's own writings are entertaining in a manner which serves to support his own hypothesis. Presumably he will write nothing of value, once he is old.) Further, his preoccupation with the visual and with visual aesthetics fails to take into account the overtly *physical, tactile and kinetic* sensibilities which inform both our creation and appreciation of, and engagement with, artefacts. The technical – and the pleasures attendant thereon – are more or less ignored. Indeed, discussion of these abstractions displaces any attempt to suggest how the different ways in which artefacts are engaged with may relate, one to the other. That is one objective of the present undertaking.

The argument mounted here, while narrower, in the sense that its focus is on *design* (as defined in the introduction) is, I argue, more carefully drawn. I am interested in the forms of (primarily) practical, useful objects, such as the tools of the Upper Palaeolithic period, the Ardabil carpet, the watering pot, the wood screw and my laptop computer; or symbolic devices such as the scarab and the denarius. Plainly, there is overlap with 'art', but my definition of design acknowledges the existence of unspectacular, modest artefacts which do not feature in Miller's account because they lack the obvious 'display' elements, which he favours. The wood screw, for example (despite the sequence of complex machinery required for its production) was never, one suspects, intended to deliver the entertaining *frisson* of the kind Miller envisages; and it is hard to envisage a lineage, whereby the production in the past of comparable, nearly 'invisible'

artefacts once formed part of such a display; yet banal artefacts such as these form a good part of our created environment and are worthy of explanation. This, Miller's argument alone cannot do.

This narrowness also extends to a preoccupation with the initial creation of artefacts and their immediate reception, while neglecting any contribution artefacts may have made (and make) in mediating social relationships after that initial transaction; that is, once they have been loosed into the world and become remote from their original creators and social environment. By contrast, that also is a goal of the present undertaking.

Miller places great emphasis on the 'neophilia'[3] of *Homo sapiens,* that is, our preoccupation with novelty. Once again, while this may apply in many circumstances (perhaps more especially in our own age), such a position negates the normative role of design. The tension facing the designer is (and always has been) to strike a balance between making things which are different and making things which are the same. The tendency to favour one rather than the other will depend on context. The individual may often wish to construct a personal identity, but rarely wants to do so at the expense of exclusion from the group. Ritual is – partly - the embodiment of 'keeping things the same', and is no small item in human life. Miller (above) claims it as yet another by-product of sexual display, side-stepping its direct and more obvious claims to exert tremendous power over *the group*, and thus, as Dissanayake, Mithen, Dunbar, Deacon and others suggest, regulate behaviour. Such regulation (given the conundrum of the credibility of language, discussed in chapter four), it can be argued, is directly adaptive in terms of the more effective securing of resources, and thus - again - a product of natural, rather than sexual selection; and artefacts are, I argue, one such means by which this tension between individual and group is negotiated.

Contrary to Miller's position, I assert that the consequences of creating effective, affective forms and appraising them include, but extend beyond, any contribution made to the process of sexual selection –

important as that doubtless was and is – to embrace the effective mediation of other, more general types of social relationships: the alliances and enmities, by which all social structures are created, maintained and renewed, the 'non-reproductive' relationships central to Deacon's account of the workings of social contracts and ritual, whereby artefacts which had been signals became symbols, the better to mediate such relationships.[4]

One further reservation: as acknowledged at the outset, one interesting direction which this study might point to, but which is not developed here, is how food – by the processes of ingredient selection, preparation, cooking and presentation – is changed into artefacts, in the full sense being articulated in this study. If Miller points to species asymmetry with regard to artistic outputs (a position yet to be wholly vindicated), such a profile might also be detected – but in the other direction (as far as we know) – with regard to women and cooking. Survival and reproduction crudely correspond to food and sex. Miller's proposition embraces only one of these. Yet food not only figures in the everyday mediation of social relationships, but invariably features in countless festivals and rituals throughout humanity. Indeed, it is often used as a direct expression of that ritual's particular character, with special food - both in content and style of presentation - for special occasions. I do not doubt that food is used as an agent of seduction between the sexes in both directions;[5] nor do I doubt that banquets may operate as 'costly signals'; but its other roles (which embrace both style and economy), surely, are much more common throughout history, and warrant an explanation. I propose that the model described here, in which artefacts are the bearers of tacit social intelligence, would go a long way towards doing just that.

Miller's thought-provoking and intermittently well-argued position serves only to explain a part of the picture he presents. Doubtless, as Noël Coward once sang, there is a great advantage in having 'a talent to amuse'[6] in the course of courtship, and equally probable is the suggestion that it has both a long evolutionary history and some unexpected consequences for

human creativity; but the proposal that, of itself, it has sufficient explanatory power to account for the origins of *all* human creativity is not credible. An account, such as that mounted here, where both natural and sexual selection are admitted as forces which have shaped it, by contrast, is.

Having said that, Miller makes one telling concession and one perfectly correct observation: his recurrent theme is that the assessing of 'beauty' (which I categorise as but one among many of the criteria by which an artefact may be appraised and, in this context, not always an especially helpful one) began as part of the mechanisms by which potentially fit mates were selected. Despite this, Miller allows it may have migrated, to inform other, non-reproductive social transactions:

> The fitness indicator theory of aesthetics suggests that the perception of beauty in an art-work is normally just the first step in a chain of inference that reaches all the way into our mechanisms of social cognition and social attribution. Aesthetic judgement normally entails some attribution to the artist of intelligence, creativity, skill, maturity, imagination, conscientiousness, and agreeableness - or their opposites. These in turn are taken, unconsciously, as inputs into other social assessment systems, principally mate choice, but also systems for evaluating offspring, relatives, friends, allies, and individuals in other biologically significant social roles.[7]

Its origins in mate selection may be disputed, but acknowledgement of the importance of these non-reproductive relationships is a significant caveat to his more general thrust (an effort, one suspects, to align his theory more plausibly with common experience). Secondly, in suggesting that aesthetic judgements have developed, in part, as a means by which the intellectual, technical and character traits of the creator of an artefact may be apprehended, Miller is, I am sure, correct. Both these observations will presently be developed.

5.2   *Shortcomings of Voland's position*

A more recent contributor to this debate has been made by Eckart Voland.[8] His position is interesting and – while it embraces and extends aspects of the argument proposed by Miller – it also includes others much closer in spirit to that articulated here. Voland argues that by extension from the Handicap Principle, the creation of artefacts is essentially a process best understood as the creation of 'honest signals'; that these honest signals are created to refer not only to genetic fitness among prospective mates, but (picking up Miller's suggestion about the application of the process in non-reproductive spheres) to advertise the power and strength of the individual, or to attest to their moral worth to others in the group. These sexual, political and moral signals can take the form of artefacts. Aesthetics evolved as one means by which they could be evaluated for credibility. In a social context where Machiavellian intelligence pertains, simple expressions of these qualities (potency, power, moral worth) would not be credible, he argues, whereas costly signals are. He writes:

> In the world of artefacts, aesthetic preferences have the same
> function that they have always had in a world of natural features,
> namely as aids to orientation for decisions in sexual and social affairs.[9]

In this narrow – but vital – particular, Voland and I are at one.

Yet there are problems with his argument. Most of them arise from perpetuating – as Miller and Thornhill do – the narrow terminology of the debate: no acknowledgement of anything other than visual aesthetics, such as technical pleasure; only examples which fit this programme of costly signals are brought forward to support the argument, whereas evidence from Mithen (no less, I suggest, than from any tranche of human history or contemporary life) would demonstrate that countless 'cheap' artefacts are brought into the world; and these are not without their social

consequences, as (in the cases of the scarab, the watering pot and the wood screw) has been shown. Yet another difficulty arises from the belief that *all* artefacts are brought into the world with the *intention* that they will make a socially significant statement in the realms of mate choice, politics or morality and - by implication, at least - nothing else. Voland is not writing of symbolic meaning, but care over the formal aspects of an artefact, such that its aesthetics will deliver such messages (or 'signals'). Yet once again, in practice, artefacts such as the wood screw, no less than millions of its contemporary historical and pre-historical equivalents, demonstrate that countless objects are brought into the world with little, if any, thoughts in those directions.

The chief flaw, shared with Miller, is that aesthetic appraisal is more or less reduced to the identification of 'beauty' (a fugitive concept, as some several thousands of years of philosophical reflection have demonstrated). I re-iterate: aesthetic appreciation is only one side of the affective pleasure we take in artefacts; technical pleasure is another. For his argument to work, Voland is obliged to equate the costs of artefacts with beauty: 'only what is costly is perceived to be beautiful',[10] he writes.

If all artefacts produced and circulating among humans followed the pattern described in the 'signal' element of analysis of the Ardabil carpet in chapter four (albeit on a reduced scale in most cases) and operated at no other level, then this assertion would be plausible; whereas it ignores the fact that, among the range of different types of social relationships which aesthetic appreciation can mediate, the cost dimension of some is of little, if any, consequence. Further, it ignores the extent to which an artefact created with exactly these 'costly signal' considerations in mind may thereafter mediate a near-infinite variety of other, unenvisaged social relationships, some of which may similarly involve costly signals, whilst others need not. Further (as will shortly be demonstrated through the example of the Apple iBook), one artefact may *simultaneously* support a whole variety of

different types of social relationship, many of which will normally be quite beyond anything its creators may have had in mind.

5.3   A short thought experiment

The extent to which the aesthetic appraisal of artefacts almost certainly arose from pre-existing sensibilities towards the natural environment has already been outlined. In a world which includes artefacts, the aesthetic appreciation of that natural environment vigorously persists. Aesthetic pleasure from the natural environment and the environment of artefacts – while different in some critical particulars, as will be shown – nonetheless overlaps. One of the ways in which it overlaps is that it may, like the appraisal of artefacts, have social consequences.

Imagine two people in the contemplation of a landscape; aesthetic discrimination is exercised and pleasure shared. That it is jointly (and perhaps, silently) appreciated will be revealing and have social consequences for those so doing: sensibilities are made apparent, sympathies consolidated. The landscape is not costly and, but for the time spent staring, the act of appreciation is not especially costly either.[11] Consider then, a joint appreciation of an artefact – a building, say. Undoubtedly, had those same two visitors walked around the exquisitely tiled and ornamented *Jannat Sara,* the tomb of Shah Tahmasp's father, they would have agreed that the building and its splendid carpets were both beautiful and costly. But that is to take a very one-dimensional view of the way such experiences can mediate social relationships. Once again, the *joint* appreciation of its beauty by a party of two (or more) may reveal to its members much that is interesting and pertinent about each other; and, again, none of *them* had incurred much in the way of costs in this socially advantageous exercise of aesthetic appreciation.

To take the argument still further, that which is contemplated need not be costly. Unlikely as it might sound, should those same two people

share aesthetic pleasure in the contemplation of the wood screw, further social dividends might be delivered at negligible cost to either party.

In summary: if artefacts only operated at the level of signals, and aesthetic appreciation were confined to detecting the credibility of those signals, then Miller and Voland would be right. As it is, I suggest that these are only partial accounts; that the assertion, for example, that 'only what is costly is perceived to be beautiful' is, if not exactly a coarse view of the workings of aesthetic appreciation, an unnecessarily narrow one; that these other dimensions are not only worthy of consideration, but significant; and further, that they may also be susceptible to an evolutionary explanation using other lines of argument – as I will shortly demonstrate.

5.4   An evolutionary chronology

In chapter two, I described something of the evolution of our brains. I did so, because it is important to realise that their structure is profoundly informed by our evolutionary past, and has left us with 'hybrid' brains, which directly account for the three levels at which we engage with artefacts, and by which we ascribe significance and meaning. Thus, parts of our brains operate as ancient, automatic modules – reflexes, senses and perceptual biases; parts deliver technical, aesthetic and cognitive pleasure; while the most recently evolved structures enable us to support consciousness, and several levels of intentionality – these last being critical in understanding how the sensibility towards style operates, as will be fully explained shortly.

In chapter three, I described how perceptual biases which enabled us better to exploit the organic environment, avoid dangers and select sexual partners laid the foundations of our aesthetic preferences - our pleasure at forms, textures, colours and proportional balances. I argued that these preferences continued to be applied, once members of our ancestor species began to pick up objects in the environment, and thereby designate (or by modification, create) artefacts, or otherwise re-imagine or physically modify their surroundings. I have cited as evidence that this remains so, some of the

constants exhibited in the physical characteristics of artefacts. Collectively, I have called this the sensory-kinetic-affective mode of engagement. I have argued in chapter four that evolutionary imperatives have also informed how we select objects or create artefacts to bear symbolic and narrative meaning, and provided evidence that in the original context in which artefacts are created, makers or designers will often seek to align sensory-kinetic-affective effects delivered by the physical reality of the artefact, with any symbolic or narrative functions they want that same artefact to support. Together, I propose that these two modes of engagement with artefacts (sensory-kinetic-affective and symbolic-narrative) account for all possible ways in which significance and meaning can be ascribed to artefacts. I further propose that – in addition to the 'consonance' between the two modes explored in chapter four - a more complex, subtle mechanism sometimes comprehensively integrates the two, such that they operate as one. This, I will shortly describe and illustrate.

However, before I do so, these two strands of engagement need first to be placed into their proper, chronological, evolutionary context; that is, acknowledgement needs to be made of the relative evolutionary ages of each mode, as well as the 'ages' of the other two principal means by which social mediation is achieved: behaviour towards one another; and language. By re-considering the probable evolutionary sequence[12] in which these three social-mediatory phenomena appeared, I intend to suggest something of how they may have emerged, one out of the other, and thus, how they may be linked. Doing so will also help explain with more precision how, in a contemporary context - in which both behaviour and language continue to serve vital social functions - this bi-modal, integrated means of engagement with artefacts continues to enable us to express, codify, and modulate social relationships. Some of the ways in which this happen resemble both the operation and results of behaviour and of language; whilst others are quite beyond the scope of either.

The most basic means of negotiating a physical environment is through the senses. Those found in primates (including kinetic understanding) represent the accumulated adaptive histories of countless ancestor species, some of them quite unlike ourselves. For our own primate, ancestor species, as noted, the adaptive benefit of sensory, physical and mental engagement with the material environment was to render that environment negotiable, enabling individuals physically to know it and make it familiar, such that dangers might be avoided, and the resources and reproductive opportunities it afforded be more effectively exploited.

At some time, ancestor species of primates evolved such that, in addition to sensory functions emerging in order better to exploit the physical environment, further adaptive advantages could be secured by socialising in groups. The negotiating of relationships within and between our primate ancestors - if the social habits of modern Great Apes can be taken as approximate equivalents - would most probably have been achieved through specific types of social behaviour: the manner in which food is secured, allocated and consumed; sex; grooming, perhaps, or its equivalent; violence; and appeasement behaviour. As in the sensory negotiation of physical environments, these primal, social behaviours were (and for us, still are) also experienced through the senses, both in terms of an individual's bodily engagement with another or others, and of the smells, sounds, textures, tastes, and visual cues of the materials, inorganic and organic, which made up the physical environments - complete with found objects - in which social behaviours are played out. Thus, this means of mediating social relationships is primarily sensory and physical.

Some objects in the physical environment came to be selected for practical uses and, eventually, to be modified, the more effectively to secure resources. Thus, a branch of the sensory-kinetic-affective engagement with the physical environment came to inform the processes by which artefacts are brought into being, and thereafter, appraised.

As the brain gradually became capable of supporting ever more complex social relationships, so these found, and eventually, created objects came to have a role in negotiating and articulating them. The example of the Acheulian handaxes has been cited, where it has been argued that they functioned as signals of genetic fitness during sexual selection among hominids. Thus the sensory, perceptual and nascent technical and aesthetic preferences, which informed the creation and appraisal of artefacts, came to be joined by the beginnings of their social significance. As shown in chapter four, such signalling was eventually extended and transformed by the emergence of the capacity for symbolic thought and consciousness – with consciousness itself, initially perhaps, a device to enable the bearer better to predict how others like oneself might behave.

Artefacts may have had a role as 'props' or qualifiers of any mimetic form of communication which prefigured language; or fulfilled such a role if gestural communication arose simultaneously, but closely intertwined with the emergence of language - the other major expression of symbolic thought. Thus, the engagement with artefacts joined behaviour and appeared just before or simultaneously with language as an alternative means by which effective social relationships might be mediated; and thus, both halves of this account of our engagement with artefacts came to be in place.

It has been argued that both language (Dennett – *fig. 22*) and material culture (Mithen) provided early *Homo sapiens* with external opportunities for reasoning, alternatives to relying solely on the neural circuitry inside the brain in problem-solving. On the basis of the dramatic change in both the types and character of artefacts and art which then appeared – and of which the artefacts of the Upper Palaeolithic are an instance - it can be argued that this marked the emergence of the modern human mind, in its mature form.

A putative evolutionary sequence accounting for these developments and stretching back through the ancestor species of primates and beyond would be:

1. sensory-kinetic engagement with the material environment;
2. social mediation through behaviour;
3. sensory-kinetic-affective engagement with artefacts;
4. signalling by means of artefacts;
5. symbolic-narrative engagement with artefacts;
6. spoken language.

This sequence retains the possibility, as noted, that items five and six might have developed synchronously.

5.5   *Chronology informs functions*

The sensory-kinetic-affective mode of engagement with artefacts is rooted in the ancient, physical, acoustic, olfactory, gustatory and visual sensations of simple life forms negotiating their environments. As argued in chapter three, amongst our hominid ancestors, it operated at two levels at least: at the level of immediate, sensory responses and perceptual biases, prompting gratification or repulsion; and at the cognitive level of technical and aesthetic discrimination (built on this older level of the senses), prompting pleasure or unease. To extend these sensibilities towards artefacts – specially selected, possibly modified, found objects in the environment – is hardly a surprising development. However, this transition marks more than a simple exaptation, as will be shown. This older, sensory-kinetic-affective mode remains, I argue, wholly non-linguistic; that is, it usually operates at the level of the subconscious and is not readily translated into linguistic terms.

The symbolic-narrative mode, by contrast, is simultaneously non-linguistic and para-linguistic: non-linguistic, in that meanings are attributed and apprehended without language; para-linguistic, in that, like language, it is an expression of symbolic thought; that is, artefacts, like words, may symbolically represent absent things or states, which they themselves do not

resemble (such as a wedding ring symbolising a marriage). A consequence of the manner in which this level of engagement with artefacts operates is that it resembles key aspects of linguistic practice and can more easily be so expressed. If the argument that mimetic communication preceded linguistic expression is entertained – or even if it is not - it may have been that these para-linguistic means of attributing symbolic meanings to artefacts predated the emergence of language, as such. Thus in such circumstances - or even if the symbolic use of artefacts emerged synchronously with language – it is their *proximity,* in terms of evolutionary sequence, which helps explain something of their resemblance to one another.

The symbolic-narrative mode, once it emerged, was a powerful tool for social mediation; yet I suggest this later, adaptive function of language was pre-figured in aspects of our ancestors' sensory-kinetic-affective engagement with artefacts; and that today, this older, social-mediatory mechanism – rooted in the senses - continues to operate alongside language in a critical way.

5.6   The disadvantages of social mediation by behaviour and by language

Behaviour is a *time-based performance.* To have a social mediatory role, it must be witnessed if it is to be believed and have its full social impact: the victor must be seen to win by the others in the group (especially rivals for dominance); or the requisite amount of time must be invested in meticulous, soothing grooming. Spoken language, by contrast, has advantages over behaviour as a social mediator. As Dunbar has suggested, it enables the economic transmission of reports of behaviour to any group of individuals present when such accounts are retailed, thus securing or ruining reputations - the 'gossip' of his persuasive account. Nonetheless, despite these potentially dazzling advantages, language has its own drawbacks: as noted, as a social mediatory channel, it is essentially a means by which reports of *behaviour* will be circulated. Those listening may, thereafter,

retail (and change) the report, and those to whom it is retailed may further distribute (and change) it. Thus, with each step away from actual witnessed behaviour, questions arise as to the credence and veracity such reports – gossip - should be given. This remains true to this day.

I have described the processes by which, according to Deacon and others, it is argued that both rational calculations of perceived self-interest (social contracts), together with the social cohesion demanded by often irrational, but powerful, ritual and myth may, together, have helped remedy the dilemma of the credibility given to what might be said. These processes would have the effects both of regulating behaviour itself and putting constraints - and penalties - on any whose behaviour, or reports of behaviour, might be self-interestedly deceptive. This also remains true to this day. Artefacts have roles to play in expressing these contracts, rituals and myths.

However, neither contracts nor rituals would have lifted from the individual the burden of constantly being watchful for indications of the likely behaviour of others and therefore the support they might lend or threat they might pose to that individual's social position, opportunities for mating, not to mention chances of survival. Reliable social intelligence would have remained an absolute prerequisite. While for most of us – though not all – the divining of the behaviour of others may not now be a matter of life and death, it is, nevertheless, a key universal of the successful negotiation of our social environment.

In such circumstances, a special role emerges for our engagement with artefacts.

5.7   The origins of style

Something of the relationship between the sensory-kinetic-affective and the symbolic-narrative modes of engagement with artefacts was described in chapter four, where I suggested that if symbolic-narrative meanings are *intended* for an artefact being created, then efforts will be

made to make the sensory-kinetic-affective characteristics *consonant* with those symbolic meanings. I cited the Ardabil carpet as an example of the lengths which can be gone to in this particular, where the social mediatory power of the artefact is the originators' chief concern. The Ardabil carpet was, in many ways, exceptional, but such consonance is not; rather, it is a commonplace and has been the everyday preoccupation of makers and designers (where symbolic-narrative meaning is *intended*) for millennia. My suggestions as to the origins of aesthetic responses have been given. I would further suggest that other details of the effective securing of resources provide an evolutionary explanation for another, crucial aspect of our engagement with artefacts: style.

Mithen writes of the dramatic increase in the effectiveness of hunting strategies which distinguished the onset of the Upper Palaeolithic period. Citing evidence from other archaeologists regarding the hunting of the ibex, he draws attention to the sophisticated tactical planning, improved weapons and 'logistical camps'[13] - sites specially selected for the strategic ambushing of their intended prey. One key explanation which Mithen offers for this improvement was anthropomorphic thinking. He writes 'This is universal among all modern hunters and its significance is that it can substantially improve predictions of an animal's behaviour'.[14]

In hunting, predicting the behaviour of the intended prey is central to success. The hunter becomes highly attuned to a chewed branch, a broken twig, a cluster of droppings or hoof prints. What are they of? Are the hoof tracks deep, suggesting a large (or pregnant) animal, or shallow? Is this animal in peak condition, or injured, limping and trailing blood? Everywhere, the physical environment is scoured for the least indication of what has left these clues, as to what the beast is like, where it may have been, where it is now, or where it is going. In doing so, the brain is – once again - satisfying the *epistemic* urge which characterises its actions at so many levels. It is creating the most plausible story on the basis of the evidence available, revising and modifying the account as each new piece of data presents itself

for scrutiny. It should be noted that in this particular mechanism, that urge is satisfied by *non-symbolic* means.

I suggest that these highly attuned sensibilities in predicting the behaviour of animals (which, according to Mithen at least, hunters conceived of as thinking and behaving like human beings) were either transferred back or simultaneously applied in the subtle appraisal of human artefacts; and that in artefacts, it is the character and therefore likely behaviour of actual humans which will be revealed if close attention is paid to *style*.

5.8   The importance of style: Part 2

Style is the key concept which has been missing from the debates about the evolution of our engagement with artefacts. Miller's, Voland's Thornhill's and others' reflections on aesthetics are of value, but it is style which holds the key to understanding how all the different aspects of our engagement with artefacts can be brought together into an intelligible, coherent whole.

Style is not the same as aesthetics but a sub-set of them, in that we may experience an aesthetic appreciation of anything at all - and do; but style is a property peculiar to *created* things. Aesthetic sensibilities are pleasurable responses to particular configurations – adaptive in origin, as has been explained – but (unless shared) not of themselves especially revealing about the past or potential behaviour of others. Responses to style, however, are focussed on detecting not just pleasurable configurations, but 'the manner in which the thing is (or has been) done'. As such, the pleasure in appreciating style is derived, in the first instance, from recognising in *the manners of doing things,* the character, and therefore likely behaviour of the makers of such things.

The over-arching principle which unites all exercises of the sensibility towards style is that it appraises *evidence of action and intention*. The sensibility towards style is exercised with regard to artefacts in order to secure reliable, tacit social intelligence in three distinct ways: firstly, most

commonly, most obviously and probably most importantly, with regard to the sensory-kinetic-affective mode, it is the means by which personality, skills, intelligence and other critical characteristics are detected on the basis of subtle interpretations of the physical reality of the created object. Thus, the regularity, or otherwise, of blows which have fashioned the axe, the neatness and efficacy (or careless clumsiness) of its binding to the haft, even the presence, absence or disposition of any added decoration will each, in their way, be revealing (this last, quite apart – at this stage – from the decoration's symbolic or narrative content). This first judgement of style is, arguably, the most important contribution to *tacit social intelligence.*

Thereafter, two 'sub-routines' may follow: a second judgement may be made as to the extent to which this first body of tacit social intelligence corresponds with any symbolic or narrative meanings the appraiser believes the maker has intended the artefact to sustain. I argue that this evidence from the earlier analysis of data from the sensory-kinetic-affective mode usually takes precedence over that from the symbolic-narrative mode because it is an older, and therefore more reliable source of intelligence. Thus, if the correspondence between tacit social intelligence from this first exercise and the symbolic-narrative intentions is close, the symbolic-narrative intentions are given credence; if poor, they are not.

Thirdly and finally, yet another stylistic judgement is made regarding the consonance running through *all* the various levels, considered as a whole.

These are:

1. the artefact's sensory and perceptual effects (which have been chosen or allowed to remain by the maker);
2. its technical, and aesthetic effects (ditto);
3. the tacit social intelligence delivered by scrutiny of both 1 and 2 (*the physical reality of the artefact*) concerning the character of the maker;

4. and lastly the symbolic-narrative meanings which have been
    intended by the maker (if such there are).

All of these are re-evaluated as a whole, further to determine the extent to which the artefact is revealing about the characteristics of the maker, and so predict behaviour. In this way, these three judgements of style embrace, unite and thoroughly integrate both modes of engagement and all the levels which these modes subsume.

These three exercises in stylistic judgement are sequential to the extent that neither the second nor third judgement can be made without the first; but thereafter either or both of the others may follow.

I hasten to add, in my view, we are only occasionally conscious of such mechanisms at work, and rarely aware that we are even posing such unspoken questions, such that their workings can sometimes seem instantaneous and at others, a long-drawn-out, dimly perceived process.

5.9   *The consequences for the makers of artefacts*

Consider the consequences for makers: an individual creates an artefact exhibiting the universals to which her sensory perceptual biases and technical and aesthetic pleasures are more or less attuned. In addition to these universal impulses, creators will be constrained both by the range and local knowledge of raw materials available, tools of manufacture, skills, and so on. If only these apply, then – following Mithen's argument, that artefacts can be used as a means of thinking and problem-solving - it is reasonable to propose that an artefact may be created *with little or no regard to its social impact*.

However, usually, of course, the problem being solved is partly – or wholly – a social one. The creator may strive to conform to (or vary) the precepts of the group as to how a thing should be done – its style. Subconsciously (or consciously) the creator knows that the sensory-kinetic-affective qualities of an artefact (quite independently of the symbolic-

narrative content) delivers through its style, rich, valuable, credible, concrete, tacit, social intelligence. Because of this, however much any general sensory or perceptual responses may set an emotional 'tone', such tacit social intelligence has the greatest potential directly to inform both the character and the content of the symbolic-narrative meanings an artefact may support and, therefore, from the maker's perspective, the social mediatory power of the artefact. In such circumstances, the creator will draw on her own sense of style – chiefly, her sensibility towards the extent to which the physical characteristics of the artefact may prompt others to feel positively or negatively towards her. I propose that this process is commonplace and, at the level of practice, widely understood and appreciated; but I further suggest it is rarely expressed or discussed in precisely these terms.

Most of our artefacts fall into this second 'actively social' category.

5.10   The consequences for those appraising

Consider the differences in the two cases: in the first, despite no self-conscious intent to manipulate the reactions of others towards herself, because of the manner in which the artefact was physically, manually fashioned – as with walking, or handwriting[15] – something of her character is embodied in its physical make-up. In appraising it, others will, I argue, be alert to what is revealed, even if that was not the maker's intention; and further, I propose that – subject to the quality of the evidence and the skill of the appraisee – *what will be revealed will be accurate*. In the second, those appraising will also evaluate the artefact for tacit social intelligence about its creator. As suggested above, the more experienced or sophisticated will also make judgements as to the extent to which they are handling or looking at something, whose final form and finish are the result of an *intention* to manipulate their feelings. This does not mean that intentional messages are necessarily considered as inferior to unintentional ones, only that the message will be evaluated in a different light.[16]

5.11   *The content of tacit social intelligence*

Consider the benefits of tacit social intelligence in our ancestors' evolutionary environment: if the sensory and perceptual effects – following the evolved universals common to us all - are pleasant or stimulating, rather than unpleasant, and if the technical and aesthetic qualities arising from these are similarly pleasurable, rather than disagreeable, then others with comparable sensory, perceptual, technical and aesthetic biases will – at these levels - immediately find the artefact pleasing. This will have consequences for how the appraisee regards the creator in possession of a corresponding set of aspirations towards pleasure. Secondly, as technical and aesthetic preferences were built, it will be remembered, out of earlier discriminatory skills geared towards the successful exploiting of resources, choosing of mates and avoidance of dangers, so evidence from the physical make up of the artefact, that these technical and aesthetic sensibilities have been exercised in its making, will suggest to others that the creator is, by implication, alert to just these advantageous criteria of discrimination. The fact that an artefact may be made of high-quality raw materials will further signal a probable knowledge of resources – other than and including those materials of which the artefact itself is made – in the region.

That much is, I would argue, fairly straightforward. However, it is the detection of characteristics through the fuller exercise of stylistic interrogation, described above, which delivers the subtler information. Starting, once again, at the simplest level: how well a thing is made - in the sense of how choices of materials and making techniques have led to a viable tool, say - will directly imply something of the skills, intelligence and persistence of the maker. Evidence of skill will suggest, not just persistence in pursuing an immediate outcome in the making of this artefact, but persistence in practising such skills beforehand. Similarly the economy or (where an artefact is to operate as a signal) extravagance in the use of materials and labour will further reveal data about the maker. Adherence to –

or departures from – the conventions regarding the style adopted by the group will be further revealing. If there is adherence, is it complete; if innovation, is it intelligent (indicating an understanding of the conventions and, therefore, group values) or wayward (indicating indifference to those values).

More than this, close scrutiny of the artefact will deliver other, vital information about probable behavioural characteristics: does evidence of the manner in which the thing has been created suggest confidence or temerity, thoroughness or laziness, humour or bombast, an even temper or violence, or even nobility or any of its opposites? Has consideration and imagination been extended towards others (such as those who might use it) or an indifference, or contempt? This is but a partial list of the near-infinite permutations which might figure in such vital, flexible, usually unconscious intuiting.

5.12   *The roles of artefacts remote from their makers*

For our ancestors, signs of intelligent, persistent, protracted, skilled application in the elegant knapping of a flint blade (*fig. 13*) spoke directly, I argue, of the character of the maker. Those evaluating it would reflect in the manner suggested above, and ponder on whether such a maker, with such abilities, characteristics and attitudes, would be a threat, a useful ally, or of no consequence.

Of course, artefacts, even during the Upper Palaeolithic period, one assumes, would change hands (and, as noted, this is one of the key, universal aspects of our engagement with artefacts which Miller, Voland and others have largely neglected). Thus, someone contemplating the blade might ask themselves if the mere *possession* of it - even if no attempt were made to deceive and pass it off as one's own creation – might identify one as a person who also values the behavioural qualities it embodies. Would this association with the behavioural qualities implied by one's valuing of the aesthetic and stylistic character of the blade, attract some kinds of individuals, and

antagonise others? Would such outcomes be desirable, or not? In other words, I suggest that the physical character of an artefact is capable of eliciting evolved, evaluative, and – in the fullest sense - style-based responses, positive, or not, which can deliver vital, social intelligence about the maker; but that such an appreciation of the physical import of the artefact may thereafter enable it to be successively re-deployed in social contexts in order that each individual choosing to be associated with it may enhance their chances of fully exploiting future social opportunities, or ward off those others who seem to pose a threat.

This is arguably a more complex, comprehensive skill than the narrower detection of 'beauty' in 'works of art', which mostly preoccupies Miller, and to a lesser extent Voland.

5.13   *The roles of artefacts remote from their original social contexts*

Reputations may thus be passively enhanced or detracted from, expressed or modified by means of a tangible artefact, for as long as it has currency in its original social environment. However, over time, neither the creator nor those with whom it is initially associated has any way of guaranteeing either its physical integrity, or of ensuring that those responding to the artefact will divine the original, precise intentions. Consequently, as time passes, the meanings and significances it may acquire become wide open, serving the aspirations and concerns of those making up each subsequent social environment. The physical record of the behaviour of the artefact's creator(s) is only the first manifestation of social intelligence represented. As the artefact ages, so it may (or may not) physically change. The scarab loses it gloss, the denarius is worn down by passing through countless fingers, the carpet fades and rots, the watering pot chips, the wood screw tarnishes and the laptop computer – as will be shown in some detail – loses the lustre and sparkle it had when new. As an artefact enters into a succession of new social contexts, the presence, absence, extent and character of these physical modifications will each be

interpreted as evidence of the behavioural characteristics of those who have engaged with it up to that point, and prompt – or not, as the case may be[17] – a corresponding sequence of different, consonant symbolic-narrative meanings.

Thus in such circumstances, *artefacts physically embody an accumulation of the behaviour of others*, as the randomly selected top of a London pillar box, shown in *fig. 23*, demonstrates; and behaviour, as noted, is the oldest and most credible means by which social relationships are mediated.

5.14 *Deception and detection*

Naturally (as in behaviour itself, and in language), in the creation of artefacts, the opportunity exists to deceive others as to the implicit character of one's behaviour, or the behaviours of others. Indeed, this is a human commonplace. Yet equally ubiquitous are the highly-attuned powers of discrimination interested individuals may exhibit, whereby the evaluation of the characteristics of a particular type of artefact – the details of the configuration of trainers,[18] the number or magnitude of scratches, dents or rust on a car's bodywork, the credibility of the 'patina' on the antique mahogany dining table – may deliver social information, which the group to which that individual belongs, judges vital. In the case of the dining table, for example, certain types of behaviour – steady, polite domestic life, perhaps – rather than others, such as violence or carelessness are valued (literally) over others. Thus the antique dealer may send it to the 'restorers' to remove the gouges caused by the young, inexpensive, but over-hasty, removal men, and by means of filler, stain and french polish, 'restore' a partly fictitious account of the steady passage of time, in which the table deceptively and selectively testifies only to behaviour of the desired, steady and largely uneventful variety. Those skilled in appraisal will detect the deception, and add knowledge of the behaviour of both restorer and dealer to the catalogue of embodied behaviours the table can reveal. Those less

skilled will embrace the fiction as if it were fact – as, indeed, will some who recognise the deceit, but nevertheless prefer it to brutal truthfulness.

5.15   *Artefacts created by means other than individual, craft manufacture*

Ever since the change from the hunter-gatherer to the farming way of life, the opportunity has existed for those with accumulated wealth, and therefore, power, to control the labour of others, in order to commission artefacts – pyramids, pantheons, palaces or parks, for example – or, indeed, spectacularly large, carpets. These artefacts bear little trace of the *individual* making skills on which this theoretical account has thus far depended. Further, whereas in the Upper Palaeolithic period, no less than in history until perhaps some three hundred years ago, the majority of artefacts were made using comparatively simple tools – and therefore at least bore all the marks of the kind I have been discussing – now many, if not most, of our own possessions are made using more or less complex manufacturing machinery, such that – as with the Apple iBook, shortly to be considered - nothing is left of the traces of 'manual' manufacture.

Yet I am fully persuaded that most of the aesthetic preferences exercised towards the creation and appraisal of the results of collective, impersonal endeavour, no less than those we exercise towards machine-made goods now, were and continue to be profoundly informed by their evolutionary origins, of which this skill in the appraisal of artefacts for tacit social intelligence, honed over, perhaps, the last 100,000 years,[19] is probably the most significant part. Thus, sensory and perceptual biases are evolved and persist; but I assert, further, that we both create and appraise our artefacts *as if* they were hand-made, and *as if* the physical qualities they embody were revealing of some artisan having created them (and by this, I do not mean crass machine-made imitations of craft work).

An example of collective endeavour: I have already allowed in chapter four that the Ardabil carpet would have operated as a 'costly signal' and

explored something of the consonance I suggest existed between its luxurious, *aesthetic* qualities and the very important symbolic roles it was brought into the world to achieve. Just as our ancestors may have asked, was the blade knapped with confidence, or diffidence, so the gentle curves of, say, the stylised foliage which fills much of the ground of the Ardabil carpet (*fig. 4*), although actually the product of knotting hundreds of small lengths of wool on the structural silk threads by numerous, anonymous, individual (probably women) workers, are admired (partly) because they look *as if* they are the trace of an individual wielding - say - a paintbrush, and because they seem to indicate the skills, confidence, and aesthetic sensibilities of an individual, to whom we would respond positively. Further, there is evidence of considerable scholarship and a deep understanding both of the conventions of carpet design and of the tenets of Islam. In this case, the strength of that understanding is marked by a judicious departure from those design conventions (that is, from style as a means of encoding behavioural convention); but the departure demonstrates knowledge and understanding, rather than recklessness. It is completely at one with the over-arching spiritual objectives to be pursued through the concepts of 'alchemy' and (albeit by proxy) 'craft'. Thus, even at this remove from the actual making, by commissioning this carpet and choosing to be associated with it, Shah Tahmasp would, in turn, have been seen to be associated with the advantageous traits of character, sensibility and behaviour revealed by the rich *tacit social intelligence* it physically embodies.

An example from today (2004) of collective endeavour made still more remote from craft practice by the use of machinery: even when we know that the body of the BMW Z4 (*fig. 7*) 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, we admire and enjoy 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. No amount of *knowing* that these are not the direct traces of individual, craft endeavour seems to undermine this.

Indeed, a moment's reflection on some of the vocabulary we deploy in describing artefacts, including buildings, towns and cities, reveals that a good part of it can equally be applied to describe people and their character traits – in other words *qualities of behaviour*; thus: we might speak of a 'witty' interior, a 'noble' edifice, a 'suave' cruise liner, a 'busy' wallpaper, or an 'elderly' antique desk (or dining table), which is, we say, 'full of character'. I interpret this as evidence that this model of individual creation and appraisal continues to pertain in circumstances remote from – yet the direct successors to – those in which the practice first emerged.

5.16   Artefacts are embodiments of ways of life

Finally, and arguably, a further consequence arises from this integrated mechanism: because, as I wish to demonstrate, artefacts invariably have the potential to represent behaviour, every artefact – including the wood screw - can be thought of as embodying implicit instructions as to how one might, or should behave, and, by implication, how others might behave too. Thus it might be said that, in this way, each artefact has the potential, at least, to provide intimations of a way of life – usually *another* way of life - and can act thereby as a concrete, tangible token of another world. As with all fictions (intended, or attributed), artefacts are capable of suggesting ways of being which are more orderly, more serene, more beautiful, more loving, more viscerally exciting, or otherwise superior to, or significantly different from those usually delivered by life as it is commonly experienced.

5.17   The model

Thus, a model of how, over time, as a consequence of evolutionary imperatives, an artefact may acquire significance(s) and meaning(s) for individuals (including, at some stages, makers) or groups can be summarised as follows:

A. *Significance arises by the sensory-kinetic-affective mode, as a result of:*

1.   *reflexive, sensory and perceptual responses;*
2.   *technical and aesthetic appreciation arising from 1;*
3.   *tacit social intelligence arising from evaluating 1 and 2 (the first judgement of style).*

B. *Meaning arises by the symbolic-narrative mode, as a result of:*

4.   *more or less satisfying symbolic-narrative meanings, arising out of its interplay with different physical and social contexts; and either*

     a) consonant with 1 – 3 (the second judgement of style, delivering further social intelligence); or

     b) fashioned with little or no such consonance;

C. *Significance or meaning or both can arise by means of evaluating the degree of consonance between levels of both modes from 1 – 4a (the third judgement of style, delivering yet more tacit social intelligence); and subsequently from*

5.   *change in any of numbers 1 – 4 (including a + b), generating new significances, or meanings;*
6.   *as 5, until the artefact is no more.*

The evolved structure of the brain – as explored in chapter two – helps explain something of how this model works in practice. The 'oldest' stage of reflexive, sensory (including kinetic) and perceptual responses is the most direct, and therefore (aside from disability or injury), universal among humans. These responses are genetically pre-determined. The more recently-evolved technical and aesthetic pleasures rest on these universals,

but may be subject to some degree of local variations according to contingent cultural preferences; that is, what is needed to be valued in a particular context, and what not. With each succeeding - and 'younger' - stage, the potential for diversity of responses increases, as they are liable to be shaped more by contingent contexts, including cultural tradition, and less directly by evolutionary imperatives (although the goals to which they are orientated may, perhaps, be adaptive); they will also be processed in the more recently evolved parts of the brain. Thus, in the 'latest' symbolic-narrative stages, the particular responses elicited by each mechanism may or may not be adaptive; whereas the mechanisms themselves, I suggest, are wholly the products of evolution; that is, in the past they were selected for because they delivered, on average, adaptive dividends in terms of effective social mediation.

They may still.

5.18   The 'non-linear' operation of this linear model

Of course, in practice, this neat, comprehensive, exhaustive linear sequence need be neither exactly, nor completely reproduced. For example - as I have argued is normally the case with the wood screw - any of the aspects of the sensory-kinetic-affective mode might be apprehended, while no symbolic-narrative meaning is ascribed. Indeed, this is probably the normal pattern for negotiating great swathes of our physical environments, because to ascribe symbolic-narrative meaning to *everything* or, indeed, every thing, would be to overburden the brain with functionally superfluous data, as the example of the scratched paint on the pillar box (*fig. 23*) demonstrates. Alternatively, such might be the overwhelming power of some pre-existing social, or other intelligence, that symbolic-narrative meaning or significance may be ascribed with little or no reference to the immediately available, sensory-kinetic-affective data. Thus, the 'genuine' nail from the cross (unlike the wood screw) mounted in an elaborate reliquary, no less than Napoleon Bonaparte's toothbrush,[20] or the perfectly ordinary microphone said to be

'the one Elvis used' (all shown in *fig. 24*).[21] Further, an artefact which may have had symbolic-narrative meaning ascribed might thereafter 'slip out' of that mode of engagement, to become solely apprehended through the sensory-kinetic-affective mode; and *vice versa*.

So routinely do we deploy these abilities, that any parts of the sequence from 1 to 5 may seem to occur virtually instantaneously, such that we are barely aware of their action. In these provisos of non-linearity to this linear model lies the extraordinary flexibility, and therefore power, of this process of engagement with artefacts; and accordingly, helps explain why *any thing can mean anything.*

5.19   The model: some difficulties

I am obliged to acknowledge three difficulties with this model before putting it into action: firstly, precise distinctions between one stage and another are sometimes hard to draw, so closely integrated can they seem to be. For example, because of the wealth of useful intelligence it can deliver, for humans, sight has come to predominate among the five senses we possess. Drawing a precise distinction between a pleasurable visual *sensation*, an *aesthetic* visual pleasure or pleasure at the recognition of *tacit social data* (the style tests) is hard, so contrary does such a differentiation run to the apparent immediacy of visual experience. Secondly, by definition, much of what I want to give an account of is not usually translated into, or experienced as, language. Thus in using words to describe non-linguistic qualities or transactions, distinctions between the non-linguistic and the para-linguistic may seem less sharply drawn than in reality, I believe, they are.

The final difficulty is different in kind. Conventionally in studies of this sort, it is not customary to introduce much, if any, evidence from the personal, autobiographical sphere, for the perfectly sound reasons that it may be thought either gratuitous, or more importantly, too subjective and

therefore liable to be moulded to suit the argument being mounted, or both. However, in this instance, I am claiming that the manner in which we utilise artefacts to mediate social relationships operates at both the group or public level and at the level of the private construction of identity. I could have tried to validate this model by interviews with different people about what a possession of theirs – or of someone else's – has meant to them. Yet I have also argued that much of which I want to address is not conventionally expressed in words. Anyone who has had cause to interview 'ordinary people' (by which I mean those who, quite reasonably, have no specialist interest in this branch of theory) about their possessions will know that most are reticent about expressing anything beyond self-evident generalities. I believe that this does not indicate that these are all there is, and that such accounts are complete, but rather, that this reticence springs in part from the *tacit* dimensions of our engagement. Much of what is real, commonplace and the stuff of ordinary life operates at a non-linguistic level. Even to the extent that it can, this tacit material is rarely translated into linguistic form, and therefore equally rarely spoken of, even when specifically requested.

In these circumstances – and with such undertakings as I can vouchsafe that I have *not* attempted to mould this evidence in the manner described – I believe I have no alternative but to select an artefact of which I have intimate, sustained personal knowledge, since securing this data by other means would prove not only difficult, but very probably impossible. In this way, I hope to test the model against as comprehensive a body of such evidence as possible.

5.20   A case study: my Apple iBook laptop computer

While acknowledging these inherent complexities, I shall now test each of these putative, linear 'stages' against evidence, in the form of the significances and meanings my Apple iBook laptop computer has attracted during its six-year life. I hope by this means to demonstrate, firstly, that this model is plausible in general terms; secondly, that it logically, and more or

less easily accommodates recognisably commonplace experiences associated with our dealings with artefacts; and thirdly, that this model, which I assert is a valuable expression of adaptive, evolutionary imperatives, can be shown to be fully functional today.

In the first instance, although I use the present tense, I am writing of the computer when new.

A. The sensory-kinetic-affective mode:

    1. Reflexive, sensory and perceptual responses;

As with our experiences of all artefacts, my Apple iBook can present a range of visual sensations, depending on its position – in this case, whether it is opened, or closed, or being carried, or otherwise placed; on the viewpoint of the observer; and on the quality of the available light. When I sit working with it near the study window at home (*fig. 25*), or next to the window of my office, sunlight sometimes passes through the orange and luminous grey plastic edge of the upper half, articulating as it does so, the variations in thickness, density and colour of its different parts. At other times, the light reflected from it gives an indication of its overall shape and surface qualities. These can range from matt smooth, to shiny, glossy smooth, with occasional flashes from tiny metal components.

Indeed, the casing's curved, satiny, almost skin-like surface qualities invite the sort of sensory exploration described (and despised) by Roland Barthes in his famous essay of the 1950s on the (then, equally radically innovative) Citroen DS. When first encountered, he reported to the readers of his weekly column in *Les Lettres Nouvelles*, that the car

        …is explored 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. [22]

For Barthes, '…the Goddess [the letters 'DS', when spoken in French, sound like the word for 'goddess'] is in a quarter of an hour mediatized, actualising the very essence of petit-bourgeois advancement.'[23] Those not pursuing his particular political agenda may find less cause for censure.

It is pleasurable to touch and stroke my computer's smooth, curvaceous surfaces. Each key on the keyboard is 'dished', to receive and accommodate the repeated taps of the pads of the fingertips. More particularly, when typing, the curve of the front edge is constantly, if (normally) unconsciously, brushed against by the wrists, while the curved, smoothly textured surfaces either side of the mouse pad provide comfortable resting places for the semi-curled, temporarily inactive, typing hands.

Then there are the sounds: when typing, each depression of a key prompts an accompanying short, dull thud, resulting in cascades of such sounds; when depressed, the 'click' bar, just below the 'mouse pad', clicks; other 'musical' sounds are emitted from the small loudspeaker, each occasioned by the execution of an action, such as saving text. In addition, kinetically, its two halves can be prised steadily open, and it can be carried, fingers curled around its retractable handle, swinging from the end of one's arm.

There is also an unintended (I can only assume) acoustic dimension: while turned on, my iBook has always made curious, mechanical, hard-disk, clicking, whirring sounds, punctuated by a sort of gurgling

whenever it is doing something – anything, in fact - slightly demanding, such as saving text.

It has no discernible smell.

I have had no cause to taste it.

2. *Aesthetic and technical appreciation arising from 1;*
The visual sensations triggered by the computer lead to the perception of a discrete object of a particular form, which delivers a range of aesthetic pleasures. Thus, in several dimensions, my iBook is symmetrical (*fig. 27*). When lying flat and closed before me, it presents a pleasing vertical symmetry. When opened, it presents both vertical and horizontal symmetry, while individual elements of it – such as the screen, the keyboard and 'mouse pad', and even the hinged, elliptical grab-handle, exhibit still further examples of the ubiquitous symmetrical aesthetic. Overall, the three-dimensional curved surfaces directly resemble those found in nature – indeed, computer engineers routinely refer to this model as the 'clam-shell'. However, it should be noted that such an analogy is referred to here, merely to indicate that this aspect of its form, perceived as both visually and tangibly attractive, may well have been devised according to pre-existing, evolved, aesthetic preferences; that is, preferences originally deployed by our remote ancestors in the effective exploitation of the organic environment for resources, the avoidance of danger or the selection of fit sexual partners. Indeed, in that context, it is worth noting (if only in passing) that the curves of the open form bear some resemblance to an abstracted, idealised, human torso: the upper part (the chest), the central hinge (a slender waist), the lower part (a curvaceous groin and hips) (*fig. 25*).

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 (*fig. 28*), 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. The two sets of regularly spaced ventilation slots at the rear of the keyboard half of the computer (*fig. 29*), and the concentric circles of small perforations beneath which the tiny loudspeaker is mounted, provide yet further instances of pattern. Closer inspection of the ventilation slots reveals that some of them are not holes at all, but slight depressions, spaced and shaped like the real slots adjacent to them. Doubtless the presence of this extra plastic is for reasons of structural integrity, but it is interesting that a minor, aesthetic calculation has been made, such that the 'logic' of the reassuringly regular pattern is thought worth preserving, despite its running contrary to the logic demanded by structural engineering.

The proportions of the parts are also attractive: these are articulated in some instances by changes of colour (the coloured 'lip' of the outside of the upper half contrasting with the silver-grey of the remainder, for example) or texture, or both, such as the shiny smoothness of the handle and the Apple logo, in contrast to the matt smoothness found almost everywhere else. Countless other details exhibit similar attractive, pleasurable, proportional relationships, and I will refer to the visible 'dots' which sit at the centre of space in the semicircles formed by the curved ends of the 'click' bar (*fig. 26*) as just one, apparently insignificant example, representative of the many incorporated into this design.

These aesthetic elements are not confined to tactile and visual dimensions of the design alone. As noted, my computer has quite a repertoire of sounds. Some of these, such as the 'welcome' cadence of notes emitted every time the computer is turned on and 'booted up', as well as those which accompany various procedures while it is in use, were doubtless intended to dramatise such actions. Presumably, these were devised by their creators to be attractive, or even musical; that is, to be acoustically, aesthetically pleasing.[24] The mechanical, hard-disk, whirring, gurgling sounds, on the other hand, are by-products of action, rather than designed effects, and in themselves, are neither especially attractive nor irritating (but see below).

In terms of technical sensibility, the kinetic sense of prising it open translates into pleasure, as the action is reassuringly steady; similarly, although a little heavy, the action of carrying it is, of itself, pleasurable. In use, the successive bursts of key-pressing are pleasant motor activities (and accompanied by their sounds, as indicated).

3. Tacit social intelligence;
Obviously, the intelligence which can be garnered from the hand made - as with the overwhelming majority of contemporary artefacts - is not a possibility here. However, I have argued that hand work has provided one important basis for our aesthetic preferences with regard to artefacts, irrespective of the immediate means of making. Designers – whether they acknowledge it or not – understand and manipulate this mechanism, because it feeds into the detection of tacit social intelligence and therefore, the reactions of those appraising their work. So, like any other artefact brought into being, in devising this object, designers have left behind in it a physical

record of an accumulation of countless large and small calculations. These have been made - consciously or unconsciously – on the basis of the effects each choice of material, of form or finish (and in this instance, aural output) might have on those engaging with it.

These non-linguistic, sensory and aesthetic sensations, described above, imply that the behaviour of those who devised my iBook - and by extension, the behaviour which those engaging are invited to recognise, and identify themselves with - would be characterised, not only by calm, order, method, and logic, but also by sensuousness, humour and some playfulness. To me, as to many others similarly attuned, these are attractive behavioural qualities. In broad terms, I welcome the opportunity to ally myself with just such people, since these are qualities with which I would be happy to be thought to be associated. From that perspective, on this occasion, the calculations proved successful.

Inevitably, this tacit social intelligence, although perfectly well expressed and apprehended by means of stylistic judgements of the physical (and acoustic) details of the artefact, does not equate with meaning in the symbolic-narrative sense, for there can be no such meaning without context. It is, nonetheless, concrete intelligence. Only once this intelligence – embodied in physical form - is placed into social contexts, can symbolic-narrative meanings (where they are dependent on these) be generated.

B. The symbolic-narrative mode:
   4. Satisfying symbolic-narrative meanings, arising out of the artefact's interplay with different contexts; and either
         a) consonant with 1 - 3 or
         b) fashioned without such consonance; and

C. Significance or meaning or both arising by means of evaluating the degree
     of consonance between levels of both modes from 1 – 4a

It would be tedious, repetitious, and probably practically impossible to re-rehearse every conceivable context in which my computer may have had symbolic or narrative meaning bestowed on it in the course of its six-year 'life', as this would involve tracing its existence through each stage of manufacture, distribution and successive uses. Indeed the magnitude of such a task relating to just this one isolated, largely unremarkable artefact, is itself evidence that the mediation of social relationships by means of engaging with artefacts is a human universal, relentlessly practised throughout our lives, and that (barring storage and neglect) our artefacts can potentially bear an innumerable succession of meanings and significances throughout theirs.

Given the prospect of this near-limitless scope, I propose instead to consider just two representative types of context: a public one – the market for iBooks in 1998 – and a private one – its roles in defining my professional, interpersonal relationships when new in that same year. I hope to show an ordinary example of how the public meanings and significances can be used to construct their private equivalents. I will indicate, where appropriate, instances where data from the sensory-kinetic-affective mode – including that delivered by 'stylistic interrogation' - has informed these interactions, as well as identifying those where it has not.

The context of the market for computers in 1998:
To understand this dimension of my computer's meaning and significance, acknowledgement needs to be made of the visual appearance of other computers on the market at that time. By 1998, established, cultural conventions had been negotiated between the

makers, designers and (mostly business) users of computers. Symmetrical, crisp, rectilinear grey or beige plastic casings, smooth or uniformly textured (*fig. 32*), were judged effective vehicles for satisfying, symbolic-narrative meanings, consonant with the sensory-kinetic-affective data the designers intended the machines to bear on behalf of, and in the interests of the makers, and directed at the potential users. Rendered as an address from maker to user, it might be expressed thus:

> *As you will judge from the sensory and aesthetic qualities of this casing, inside is a device which has been constructed along calm, serious, intelligent, logical, technological, precise, rational and economic – and because we want you to prosper in a public professional or business context - impersonal principles. We have chosen this casing to spare you the trouble of having to understand the true nature of the complexity of this machine, which you might otherwise find a burden, on the clear understanding that on your behalf, we have shaped it so that it will indicate to you how you can interact with the apparatus inside in ways which will be intelligible, beneficial and useful to you in your pursuit of professional success.*

This, then, was the norm.

On its appearance, the iBook only conformed to some, but by no means all of these affective qualities. Looking back in 2002, the design historian John Heskett wrote:

> Apple's iMac computer series designed by Jonathan Ive and introduced in 1998 caused a sensation with its incorporation of transparent plastics, in what were often referred to as

'toothpaste colours', on casings and accessories. Ive's innovative concept of what computer form could be cleverly signalled a new emphasis on accessibility and connectivity in the iMac series, targeting sections of the population who had not previously used computers.[25]

Symmetry, attractive proportions, and smoothness (in evolutionary terms, this last being the standard means of indicating 'effective tool') were shared by both types of design. However, the innovative choice of translucent, rather than opaque plastic in silvery grey and, in my case, tangerine, together with its dramatically sinuous shape, set the iMac range in general, and my iBook in particular, apart from what had gone before. Why was this important?

Firstly, it implied different qualities should be valued in human interactions. Rectilinearity signalled seriousness, technical competence and reliability – invaluable qualities in business transactions, but insufficient on their own to sustain a rewarding, enjoyable personal relationship. The sensory and aesthetic qualities signalled by the colours and elegant curves of the iBook, by comparison, celebrated a certain playfulness, perhaps even humour, while the invitation to stroke extended by its surface treatment and forms plainly suggested that sensuousness, too, was to be valued.

Secondly, it subtly reconciled – at an emotional, aesthetic, stylistic level, at least – a contemporary paradox about our relationships with nature, and with technology. My partner had an iMac whose deep purple colour was marketed as 'Cranberry', while my iBook, as I have indicated, is 'Tangerine'. The choice of organic analogies for the naming of colours is not without significance, in that it is partly an extension of the representation of Nature embodied in this design,

and signalled by these - for computers - dramatic fruit colours, and the smooth, unbroken surfaces and elegant, organic curves. Even the Apple logo is a glossy bulge breaking the smooth surface (with a bite taken out of it, which must, one supposes, have been taken by oneself, *fig. 30*). 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 both to the beauties and the bounties of the organic world, embracing the sensuality of food on the way.

For decades, we have been somewhat schizophrenic about the relationships between ourselves, technology, and the organic world. Nature is increasingly appreciated by city dwellers through image, rather than from first hand experience. In such images, the superficial equating of the curved with the organic – 'Nature' - figures as a recurrent element (*fig. 31*). Further, in increasingly urban, 'developed' societies, the representation and celebration of Nature is often set up in opposition to the degradation of the organic environment which this same industrialised, technological way of life is causing.

Historically, since their first appearance in the 1980s, Apple Macintosh computers have been seen as rivals to the then vast, apparently all-powerful IBM, a famous, and to many, faceless multi-national corporation. IBM's reputation rested chiefly on large, complex computer systems for big business, rather than for the private individual (*fig. 32*). Thus the computer, which previously advertised and, indeed, traded on belonging to and being a part of the modern, industrial, technological, commercial, capitalist complex, is seen here in its fruit-like form to distance itself from these earlier associations, simultaneously catering instead for the political aspirations and

anxieties of the concerned, well-intentioned liberal, as well as their sensuous appetites for good food and eating.

Paradoxically, apart from offering an appealing, symbolic representation of Nature, the design of the iBook simultaneously offers an attractive account of technology. The casing is translucent, giving tantalising glimpses of the electronic and metal components inside. In this, the casing can be read as a kind of moral 'truth', as an exercise in social flattery, and as a palliative to the technologically challenged. Once again, I render as language that which is tacitly expressed:

> *We know technology may sometimes make you anxious, and that sometimes, you are ashamed of that anxiety. By showing you what is inside, we are being honest with you – not hiding the truth of technology from you, like some others we could mention – and we hope at the same time to give you some entertaining glimpses of these workings, because we want to recognise, and want others to recognise, that you, like each of us, are the kind of person who takes a sophisticated, knowing, avant garde, artistic pleasure in the appearance of 'pure' technology. Let them know that, far from being afraid of technology – contrariwise! - you revel in it, and identify with it.*

Apart from this calculated pitch, all further physical references to technology are to the enjoyable, science-fiction technology of the mid-twentieth century, complete with exaggerated, 'streamlined' curves (so-called 'streamlining' has been a perennial means of signifying an apparently rational, exciting, technical dynamism, by means of fictive, neo-organic form) and bright cartoon colours (*fig. 33*). This technology, unlike that haunting the imaginings of liberal

unease (not to mention its reality), is comfortably distant in time, and is seen as neither dull nor sinister, but rather, as camp, comical and downright entertaining. If the iBook is a machine, it is an ironical, light-hearted one. Technology is represented as a branch of innocent, popular entertainment.

In this way, the forms, colours and symbolic associations of the iBook can be seen almost simultaneously to oscillate between countless advantageous references; and dilemmas which, at the level of logic and (linguistic) reason are irreconcilable, are by this medium of design, made harmonious.

The context of my professional and personal relationships

I teach history and theory to students of design at the Faculty of Design at Buckinghamshire Chilterns University College in High Wycombe, some thirty miles to the west of London. Partly because of their historically somewhat 'alternative' public image, and partly because of the quality and user-friendliness of the software they have developed and put on the market, Apple Macs have long been the norm in many areas of the practice of design. Following some years with an Amstrad in the 1980s, I bought my first Apple Mac Powerbook laptop in the early 1990s. Its physical aesthetic was really only a minor variation on the grey/beige rectilinear norms described above. The iMac range, by contrast (as implied by Heskett's comments above) caused something of a stir, not least in the realm of design. In 1998 I asked the then Dean of the Faculty if he would finance the purchase of one of these new, laptop computers.[26] He agreed. Thus it became a tangible sign – indeed, a 'costly signal' in the Miller/Voland rubric - to me, as well as to those in my immediate professional sphere, that, be it ever so slightly, the Dean approved of and was supporting me in

what I was doing. For his part, the Dean may well have believed he had invested in securing still more of my goodwill towards his undertakings.

Looking back, from my personal perspective, some of the attractive things this design seemed to imply about my character, and about the qualities of personal relationships I might value, undoubtedly registered (although I did not think about them in quite the self-conscious, systematic way I am attempting here). Many of my departmental colleagues in the Faculty of Design were given similar pieces of equipment. Whatever its practical value to me as a computer, by owning an iBook, I could be seen not only to ally myself with people with just such sensibilities in the wider world, outside the University College, but also to signal these alliances in my immediate professional and social sphere. As with countless other artefacts, public significances are commonly pressed into service, in order to secure personal social objectives.

I will remark on one final incidence of an uncharacteristic piece of social mis-calculation by the designers of my computer. At first, I took full advantage of the useful carrying handle. The iBook was, after all, both heavy and a little bulky, and the handle made it very easy to carry about. However, it meant that colleagues in the corridor on E-Floor where our central offices are, and along which I was wont to stride when visiting my departmental headquarters, or when returning to my office on D-Floor, could see my new acquisition, and speculate as to its significance. Unfortunately, for a man, carrying it in this fashion corresponded closely to the conventional image of a middle-aged woman carrying a handbag. However comfortable I may be in my sexuality, however valuable I might truly believe it may be to be associated with the sensibilities of middle-aged women, and however ready to fend off the many quips which this sight elicited, I eventually

tired of fielding these good-humoured jibes, and consigned my colourful, much-prized acquisition to an anonymous, *grey* shoulder bag.[27]

5. *change in any of numbers 1 – 4 (including a + b), precipitating new significance or meaning;*

What does my 1998 iBook mean today (2004) to me, and in terms of its public reception? Both public and private will now be reviewed, in the light of changes of context in the past six years. Having established the interaction of private and public by considering them separately in stage 4, I shall now consider them simultaneously, in order more conveniently to chronicle this process of transfer and appropriation.

By now, my iBook is no longer new, or novel, or newsworthy. As Heskett observes, the iMac range 'certainly set a huge trend in motion, with the use of such colours [in other products] so widespread that it [eventually] became repetitive and meaningless, yet another trend, ready to be superseded.'[28] As is the case with any artefact which relies partly on fashion for its appeal, the contrast with what came before sooner or later wears off. The jolly, colourful rash of 'toothpaste' Apple designs has, inevitably, been replaced by something markedly different: a light, slim, elegant, rectilinear, silver-white, retro-styled, Apple laptop replaced an iBook like mine on my immediate superior's desk in 2002.

The sensory and aesthetic experiences prompted by my iBook have changed, because it has physically altered. The screen of my computer looks and feels delicate and, as a consequence, I have never had the courage to thoroughly clean it. Like the keyboard, and for similar reasons, it has become a bit dirty. Traces of accumulated dirt on the mouse pad show the pattern made by my right forefinger as,

for six years, it has moved the cursor around the screen (*fig. 34*). The hard, shiny, translucent, tangerine-coloured plastic which sheathes the hinged metal handle has a distinct crack in it, and a chip of plastic near the crack has fallen away (*fig. 35*). This makes no difference mechanically because, as noted, the handle (on the rare occasions when I use it now) has a metal re-inforcing bar, but I know the crack and the chip are there, and so does anyone else who sees it. The physical condition of my iBook causes some of my more technically-adept - and perhaps, better equipped - friends some wry amusement. In addition, from a technical point of view, it is generally recognised that its 'memory' is now considered insufficient for today's software. I asked the same Dean for a machine similar to my superior's as a replacement, and was refused. Had I offended him, I wondered?[29] Recently, I took it to a University College computer technician for 'upgrading', only to be greeted with an unconcealed mixture of mirth, sympathy and contempt.

Yet, alongside these negative, public, narrative connotations, at a personal level, I still feel positively towards my iBook. After all, six years on, I associate it with the enjoyment of creating numerous texts, including the present one. These have – usually - been well-received, and they have affected how others feel and behave towards me. The cracks and dirt signal to me a certain familiarity, an individuality and even a homeliness. Others might argue that this is the symbolic, narrative meaning I choose to believe, over and above any alternative significance it may have as an indicator of some measure of professional stasis, or budgetary impotence.

Plainly, not only have the affective qualities of my computer changed as it has worn, they now serve to support narratives absent or indeed, impossible when it was new.

6.   *As 5, until the artefact is no more.*

At the personal level, I think it highly unlikely that anyone would want to preserve my Apple iBook laptop as a token of their relationship with me (in the manner of Napoleon's toothbrush, or the microphone Elvis 'used'). I might conceivably keep it myself, as a link with a significant period of my life; or, alternatively, it might pass into the possession of a computer obsessive, for whom it represents some, by then, earlier, perhaps more innocent age of electronics. Taken with the two or three hundred other such examples he[30] owns, it may come to represent a lifetime of collecting, and a deep, narrow understanding of a particular type of artefact, through which a branch of human behaviour might be better understood. Then again, it might end up in a museum as an example of interesting, but obsolete technology; or, in another type of museum, as an example of a once significant fashion in the design of artefacts which accompanied the turn of the millennium. In all probability - and unless it breaks down first - my 1998 Apple iBook may, like its older predecessors, be handed on to someone, for whom it may represent a useful tool and an act of kindness for a while, before eventually, one supposes, becoming so much mashed rubbish in a land-fill site, providing entertainment for future generations of archaeologists, or perhaps, when our planet perishes, evaporating into so many atoms.

Conclusion

I have demonstrated that the model outlined here differs from explanations proposed by Miller and developed by Voland, in that it re-admits natural selection to the equation, as well as the survival of the individual which depends on the efficient securing of resources, rather than the individual's reproductive success alone. Further, I endorse the proposition favoured by Dissanayake, Deacon, Mithen and others, that the chances of individuals surviving are considerably enhanced if those individuals belong to

groups whose social relations – reproductive, or otherwise – are effectively mediated. In this way, the individual constructs a more or less satisfying sense of identity and increases thereby their will to live, and therefore to survive.

Whilst I acknowledged that the system of costly 'honest signals' can explain the mediation of some of these relationships through artefacts (as that aspect of the Ardabil carpet demonstrates), I claim this is only sufficient to explain parts of a much larger picture. By way of illustration of this truth, I cite the case of my iBook. It mediated just such a 'costly signal' role in *one set* of the social relations to which it gave expression: between the Dean and me; and between me and those of my colleagues who recognised this 'investment' in my activities and goodwill. Most other aspects of its social mediatory power throughout its existence either depended less, or not at all, on 'costly' signalling of this type.

The social intelligence which Miller and Voland both imply can be garnered from aesthetic appreciation is, I propose, more accurately described by invoking a sensibility towards style, where pleasure is delivered not only by means of our normal aesthetic senses as such, but also by the recognition - in the 'manner in which the thing is done' - of advantageous tacit social intelligence. I assert that this mechanism is one of *Homo sapiens*' most characteristic exercises of the epistemic urge. At this initial, stylistic level, that urge is satisfied by non-symbolic means; but I further propose that – with regard to artefacts – the attribution of meaning by the symbolic-narrative means is the other typical expression of this general, neural principle.

The model outlined here is further distinguished from those of Miller and Voland as follows: such is the value of tacit social intelligence that it can be apprehended not only from artefacts of tremendous cost (such as the carpet), but also from artefacts whose costs are vanishingly small (such as the wood screw). I assert costs need *not* dictate the value of the intelligence. Further, this model articulates a mechanism by which, once

created, such objects are loosed into the world and continue to change and develop, both physically and in terms of the significances and meanings which they may have attributed to them, such that they can potentially fulfil a succession of diverse and valuable roles in the mediating of social relationships. Lastly, rather than focusing on the relationship between creator and appraisee to the exclusion of all others, the model articulated here allows a social mediatory value in such shared aesthetic and other experiences individuals may have in appraising an artefact.

I have proposed an evolutionary chronology for the different means by which *Homo sapiens* – via ancestor species in its earliest phases – acquired the three principal means of negotiating social relationships: behaviour, engagement with artefacts, and language. I argue that of the two halves of the model for the engagement with artefacts articulated here – the sensory-kinetic-affective mode and the symbolic-narrative one – the first is older. I also argue that each half has been directly informed by the social mediatory means it both succeeded and preceded. Thus, the sensory-kinetic-affective mode is, like the social mediatory behaviour it augmented, rooted in the physical and sensory; but it prefigures (and thus, may have led to) the symbolic-narrative mode to the extent that it satisfies an epistemic urge to know tacit social intelligence regarding the behaviour of others, and thus provides a platform on which may be built that urge's other expression: the attribution of symbolic-narrative meaning. Symbolic-narrative meanings ascribed to artefacts, in turn, prefigure (and thus, in part, may have led to, or accompanied) the emergence of language.

If, as each new mechanism emerges, adaptive pressures apply, then, on average, only that which proves sufficiently 'economic' from the earlier practice(s) will persist in each new context, up to and including the present. That accomplished more effectively by the newer means, on the other hand, will supplant its older rival. Hence the complex picture today, where all three thrive.

Indeed, both behaviour and language persist as means of mediating social relationships. However, I suggest that both have drawbacks: behaviour must be witnessed to be wholly credible; or be the subject of reliable verbal reports. However, verbal reports may not always be reliable. Further, they, like behaviour, can only inform if they are witnessed, as both are *time-based performances*. Mediating social relationships by means of artefacts, however, can overcome some of these difficulties. An artefact cannot – in terms of social intelligence - have the same weight as behaviour witnessed; but as a tangible record of behaviour, it provides a more or less accurate report, susceptible to detection. Further, unlike a verbal report, it is a *temporally fluid* record, which can be interrogated at will, in the absence both of the actor to whose behaviour it testifies, and of others whose verbal reports claim to represent that actor's behaviour. Thus artefacts and the built environment can be thought of as *ambient social intelligence*.

I note Mithen's suggestion that *Homo sapiens* during the Upper Palaeolithic period (no less than modern hunter-gatherers) may have hunted more effectively by imputing para-human intentions to their prey. Consistent with the widely held view that the mind of the modern human is distinguished – in part - by its capacity for abstract thought - that is, the ability to transfer intelligence from one sphere of operation to another - I propose that the kinds of sensibilities which hunting would have required of Upper Palaeolithic hunters in terms of scouring the natural environment for signs of their prey, and predicting on the basis of such evidence how it might behave (and therefore be hunted down), came to be applied to artefacts. As a result of this transfer (or simultaneous operation from the first), this skill was used to interrogate artefacts in order to assemble evidence of the behaviour of others and on the basis of such social intelligence, predict how others might behave and, further, what the consequence of such behaviour might be for the individual doing the analysing. I argue that this skill is an exercise in sensibility to *style*, and as such, represents a subset of wider aesthetic sensibilities.

In appraising an artefact, two further stylistic evaluations are made: one, with regard to the extent to which tacit social intelligence garnered by appraising the physical characteristics of the artefact is congruent with any symbolic-narrative meaning the appraiser believes the maker intended; and another rests on a judgement as to the level of congruence throughout all the levels of engagement. These three judgements can be made using the tacit social intelligence from the first as a test, since I argue that such data delivered by the older mechanism is more reliable than that implied by symbolic-narrative meanings, because it is less easy to fake.

I propose that the kind of data delivered by tacit social intelligence would have included not just direct accounts of making skills and indications as to effectiveness in securing resources, but more general behavioural characteristics of mood and temperament as well.

As artefacts pass from their original social environments, so they continue to mediate social relationships; but in such circumstances, successive individuals come to be associated with the behavioural characteristics the artefact exhibits. Thus in choosing to be associated with an artefact, individuals make calculations as to the likely effects it will have on others' attitudes towards them, knowing that those appraising will probably be alive to its significance and meaning. As the artefact ages, so its physical characteristics often change. These changes are, in turn, analysed for indications of the behaviour of those associated with it during its existence and such changes may well modify the symbolic-narrative meanings it can then support, altering the roles it may play in the mediation of social relationships. Thus at all stages of its existence, such an artefact will represent an *accumulation of behaviour*. However, in some circumstances, the weight of some external social intelligence – such as association with a famous person or celebrity, for example – may be so overwhelming, that symbolic-narrative meanings may be ascribed with little or no reference to sensory-kinetic-affective qualities or the tacit social intelligence they embody. Alternatively, attempts may be made to distort the accounts of

behaviour the artefact manifests; but such deceptions are susceptible to detection among practised connoisseurs.

I propose that this model of the detection of behavioural qualities in hand-crafted artefacts runs so deeply (being perhaps some 100,000 years old, or more), that it continues to be deployed in the devising (designing) and interpreting of artefacts made collectively, or manufactured by highly mechanised processes, such that no trace of handwork remains. Where such undertakings are *collective* in character, the emergent style of the artefact represents countless subtle negotiations, judgements, conflicts and (as the final artefact will testify), one way or another, agreements about how the thing will be done. Much energy is invested in this process by those party to the group, precisely because at some – usually unspoken – level, it is understood that style has the potential, always, to reveal vital social data. This applies in differing degrees to the products of 'pure' engineering (such as the wood screw) as much as to the more deliberately 'aesthetic' objects (such as my iBook laptop computer), but it is never wholly absent. Thus in the industrial products of our own age, no less than in the artisanally-produced artefacts of the Upper Palaeolithic period, the object must be seen to exhibit desirable behavioural qualities, many of which are inextricably linked to the kinds of hand processes our ancestors originally employed.

Lastly, I have articulated an original model which integrates all the levels at which we engage with artefacts; I have described how this apparently linear model usually operates in a variety of non-linear and incomplete ways; and I have tested the model against a body of near-contemporary evidence, that is, evidence accumulated by me during my ownership of the tangerine Apple iBook computer on which this study is being written. I assert that, by this limited test at least, this model works well, in that it can be seen to correspond directly with recognisable, commonplace experiences of how artefacts can mediate a variety of social relationships.

If this model is substantially accurate – and I believe in all major particulars, it is – then it has consequences for how designers operate, for how they should be educated, as well as for the theoretical analysis of the whole area of art and design. It is to the beginnings of an exploration of those consequences that the rest of this study is devoted.

[1] Miller, G. F., 'Aesthetic fitness: How sexual selection shaped artistic virtuosity as a fitness indicator and aesthetic preferences as Mate choice criteria' in *Bulletin of Psychology and the Arts* 2(1), pp. 20-25. Special issue on Evolution, creativity, and aesthetics. Accessed at http://www.unm.edu/~psych/faculty/aesthetic_fitness.htm on 05.12.03

[2] Miller, G. F., 'A Review of Sexual Selection and Human Evolution: How Mate Choice Shaped Human Nature' described on the website http://www.sjdm.org/mail-archive/ jdm-society/1995-December/000136.html accessed on 18.08.04, as 'a chapter in press' for Crawford, C., and Krebs, D., (eds.), *Evolution and Human Behaviour: Ideas Issues and Applications* (eventually published as *A Handbook of Evolutionary Psychology: Ideas Issues and Applications*), Laurence Erlbaum Associates, Inc., Mahwah, New Jersey, 1997

[3] Miller, 'A Review of Sexual Selection and Human Evolution'

[4] Deacon, T. W., *The Symbolic Species: The co-evolution of language and the human brain*, The Penguin Group, London, 1997, p. 406

[5] Although I *do* doubt that it ever occurred in quite the same way as the imaginative reconstruction of pre-historic life which featured in the 1950s American 'B' movie *The Wild Women of Wonga,* in which tribes of men and women lived quite separately from one another (how this came to pass is not explained), until one day, the women (in pre-historic suede bikinis) stumbled across the men (muscle-bound beefcake) swimming in a water-hole. The men modestly decline to leave the water, until one of the women pipes up (in pure Brooklyn): 'Come on out, and I'll cook ya a meal!'

[6] Coward, N., *If Love Were All,* song from *Bitter Sweet,* operetta, 1928-1929

[7] Miller, 'Aesthetic fitness'

[8] Voland, E., 'Aesthetic Preferences in the World of Artifacts' , in Voland, E., and Grammer, K., (eds.) *Evolutionary Aesthetics,* Springer, Heidelberg, 2003, pp. 239-260

[9] Voland, p. 258

[10] Voland, p. 257

[11] In the context of Miller's argument of aesthetic appreciation arising from courtship, the cliché of lovers being brought together by a joint

appreciation of the moonlight (ideally, over the water) – if rooted in fact – provides a further, nice example of its exercise *with minimal costs.*

[12] For my purposes, the precise dates at which each is thought to have emerged are not needed.

[13] Strauss, L. G., *Iberia before the Iberians,* University of New Mexico Press, Albuquerque, 1992, p. 84, cited by Mithen, S., *The Prehistory of the Mind: The Cognitive Origins of Art and Science, Thames & Hudson,* London, 1999 (orig. 1996), p. 168

[14] Mithen, *The Prehistory of the Mind'* p. 168; doubtless this was also an invaluable skill in avoiding such animals as, in turn, may have wished to attack them.

[15] Actors are carefully trained to observe and imitate the gaits of others, or to develop different ways of walking for different characters. It is a part of their stock-in-trade. Karl Grammer, Victoria Keki, Beate Striebel, Michaela Atzmüller and Bernhard Fink have demonstrated that gait affects perceptions of attractiveness: Grammer, K., Keki, V., Striebel, B., Atzmüller, M., and Fink, B., 'Bodies in Motion: A Window to the Soul', in Voland, E., and Grammer, K., (eds.) *Evolutionary Aesthetics,* Springer, Heidelberg, 2003, pp. 295-323; graphology has an uncertain status, but each of us believes we can tell something of a person by the nature of their handwriting (to the extent that some large, international corporations insist that job applicants complete their application form by hand, that they may give it graphological analysis).

[16] As in artefacts, so in behaviour and language: thus the adolescent, whose rolling, confident gait is – so the discerning may suspect – an exercise in studied casualness, simulating precisely the confidence he both lacks and craves; or the manager who has risen, perhaps, a little higher than his talents permit, and whose raised voice and forthright ways - far from demonstrating the inner strength he wishes others to perceive in him - conceals (unsuccessfully) the weakness at the core of the man.

[17] That is, it may lose its currency in the symbolic-narrative sphere; or, as explained later, acquire new symbolic-narrative significances quite independently of any sensory-kinetic-affective qualities.

[18] Or even the manner in which the trainers' laces are laced, or left deliberately undone – details of consequence to those practised in the art.

[19] Dating here is difficult and unlikely to settle down until further evidence emerges. *Homo sapiens* may have first appeared 100,000 to 150,000 (or even 200,000) years ago. It is not yet clear if the first appearance of our species marked the first appearance of the modern human brain. Once again, for present purposes, this precise timing is not critical.

[20] An example of which is displayed in the Wellcome Museum of the History of Medicine at the Science Museum in London.

[21] Referred to in an account of the antics of a couple from Nottingham on holiday in America, where they visited the former 'Sun studios' where Elvis recorded some of his work. Found at

http//:www.canoe.ca/Travel/USA/CentralUSA/2004/07/29/562038.html visited 21.08.04

[22] Barthes, R., *Mythologies*, selected and translated from the French by Annette Lavers, Vintage, London, 1993, p. 90

[23] Barthes, p. 90

[24] Whatever effect this calculation may have had on others, they did not please me, and I have turned them off.

[25] Heskett, J., *Toothpicks & Logos: Design in Everyday Life*, Oxford University Press, Oxford, 2002, pp. 65-66

[26] The Powerbook having become somewhat uncertain in its actions after repeated 'docking' and 'undocking'.

[27] Which I understand from some of my students is sometimes known as a 'man bag'; bags and symbolism can be tricky.

[28] Heskett, p. 66

[29] In fact, the Faculty proved to be in financial difficulties, which a new appointee as Dean is now in the process of sorting out.

[30] Regrettably, convention has it that it is usually men who obsessively pursue this kind of pastime. I have done so myself, and acquired just such obscure social intelligence. This sexual differentiation (species asymmetry), if popular wisdom on this matter proves true, suggests that Miller's assertion might be correct, and that a highly-developed ability so to discriminate and interpret, combined with an excess of provisioning (more computers – or, in my case, sewing machines - than anyone would actually *need*) may indeed have originated as a function of courtship and since migrated into other spheres. On the other hand, convention may be wrong and it could be that the differentiation is only in the types of artefact collected, rather than the collecting as such. Further empirical research would be needed to clear this matter up.