CHAPTER 7

Art and Human Self-Domestication

I

The argument of this book has focused so far on the ways in which natural selection throws light on our understanding of natural and artistic beauty. My approach has tended to model the human mind on the analogy of a multipurpose tool—a Swiss Army knife fitted by evolution with an assortment of mental blades and implements for solving specific problems of survival in prehistory. Understood in this way, our minds evolved for causal and probabilistic reasoning about the normal furniture of the Pleistocene environment: other people, animals, plants, and physical objects. The model brings into the light inclinations and strategies that were selected for in such areas as food preference and avoidance, self-defense, safety, habitat selection, and imaginative planning. In all these respects, the multitool pocket knife is an apt analogy, since it stresses the practical survival benefits of specialized interests, passions, dislikes, pleasures, skills, phobias, and intellectual aptitudes.

Conceived in this way, our Pleistocene inheritance gives us an explanation for underlying tendencies in landscape painting and garden design as reflecting deeply ancient habitat preferences. Similarly, the remarkable imaginative capacities of *Homo sapiens*—along with a persistent fascination with subjects such as physical dangers, competition for power, love, or exploration—are crucial to understanding the universality of storytelling. But there is more historically to landscape painting and literature than these factors of natural selection alone can explain.

In particular, my approach has till now has ignored one of the most important features given in the list of criteria for art in chapter 3: skill, style, and a sense of accomplishment—values we admire in art. It is human intelligence and creativity that transforms appealing landscape scenes and plot outlines into works of painterly or literary art.

Natural selection stresses survival in a hostile environment as fundamental to the prehistoric evolution of any adaptation. But if art is an adaptation, mere survival is a completely inadequate explanation for its existence. The reason is clear: artistic objects and performances are typically among the most opulent, extravagant, glittering, and profligate creations of the human mind. The arts squander brain power, physical effort, time, and precious resources. Natural selection, on the other hand, is economical and abstemious: it weeds out inefficiency and waste. The organs and behaviors of animals are designed by natural selection to allow a species to survive and reproduce, making the most effective use of local resources. Evolution by natural selection is a severe accountant in the way it sorts out potential adaptations in terms of costs and benefits. How strange, therefore, to argue then for a Darwinian genesis of the arts of man, which so often tend toward lavish excess, costly far beyond any obvious adaptive benefits for survival.

This problem is not unique to understanding human evolution but is a general issue in Darwinian theory. The classic case is the peacock's tail, as both Darwin and his early critics well understood. Some initial reluctance by otherwise sympathetic scientists to accept the *Origin of Species* stemmed from Darwin's failure to explain nature's excesses: for example, the plumage and songs of birds. Darwin was acutely aware of this difficulty. In a letter written to Asa Gray the year after the *Origin of Species* was published, he joked about it. Before he had developed the theory of evolution by natural selection, Darwin wrote to Gray, "the thought of the eye made me cold all over." He had eventually resolved the puzzle of how eyes can evolve, but he was then faced with a new obstacle. Now, he confided, the "sight of a feather in a peacock's tail, whenever I gaze at it, makes me sick!" As well it might, because the peacock's tail throws up a defiant challenge to the fundamental principles of natural selection. It is expensive to grow, requiring energy that could be otherwise utilized by the organism. The weight alone of this panoply of feathers with their iridescent eye-spots makes peacocks more vulnerable to predation in the

wild, significantly reducing peacock survival in the Asian habitats where the bird evolved. Natural selection ought to have long since eliminated the peacock's tail; in fact, natural selection should never have allowed it to develop in the first place.

In addition to its costliness and danger, another aspect of the peacock's tail is inconsistent with principles of evolution as Darwin originally mapped them out. Given the ways in which environments, food sources, and predators present themselves to animals, natural selection actually pushes toward uniformity, with the constant reinvention of the same general adaptations. As Geoffrey Miller puts it, "Natural selection for ecological utility tends to produce convergent evolution, where many lineages independently evolve the same efficient, low-cost solution to the same environmental problems—traits such as wings, eyes, teeth, claws, hearts, and lungs." Natural selection should lead us to expect birds that evolved in the same environment to have much the same coloration, for example, and to differ in such respects as size or beak shape only in terms of the particular niche each species occupies. But animal species frequently violate this pattern. Birds can exhibit in the same habitat an endless variety of striking, colorful plumage arrays.

In the nineteenth century this variety was usually explained as a matter of males signaling to females that they were members of the same species. (This is implausible: members of the same species need to recognize each other, but nothing like the feathers of an oriole or a peacock is needed for that.) As with the central thesis of the *Origin of Species*, Darwin worked slowly over years developing his solution to the riddle of the peacock, which he published in its most developed form in 1871 in *The Descent of Man, and Selection in Relation to Sex*. In this work he puts forward a new, powerful, versatile principle, the second great driving force in the evolution of animal physiology and psychology: sexual selection by mate choice.

Sexual selection is, like natural selection, easily described, and its gross effects on the appearance and behavior of animals are often obvious to human observation. The peacock's tail, according to sexual selection, is a fitness indicator, a signal of health and high-quality genes. A large, colorful, symmetrical tail functions as an advertisement to peahens, proclaiming, "See what a strong, healthy peacock I am." The difficulty of growing and getting by with such a splendid monstrosity proves that the peacock

who sports one is fit; weak or diseased peacocks cannot grow adequate tails and will not, therefore, readily find mates. Indeed, the accuracy of peahen preferences in terms of fitness has been experimentally demonstrated: peacocks with the finest tails do possess relatively better genes. In addition to being a fitness indicator for the bird that has one, a tail that is attractive to peahens points toward another reproductive virtue: the male offspring of a union with a splendidly outfitted male will themselves be more likely to have splendid tails, which will in their turn be attractive to the next generation of peahens—thereby ensuring that the couple's genes will be passed through to future generations. At the same time, this process ensures that peahen preferences in male plumage are also passed on: that, in essence, is how sexual selection engraves mate-preference traits into the genetic makeup of a species.

Sexual selection is ubiquitous in the animal kingdom and throws light on curious features of animals that natural selection is powerless to explain. Not only striking plumage but such characteristics as body symmetry, healthy skin, shiny fur, agility, tireless courtship dancing, intricate aerial maneuvers, musculature, and gross strength are in part or in whole products of sexual selection. The typical pattern is that some trait of an animal that evolved by a straightforward process of natural selection is commandeered by sexual selection and either greatly accentuated or completely transformed into a fitness signal. Thus birds evolve feathers for warmth and for flight. But feathers are susceptible to coloration, can be grown in an immense variety of forms, and can act as visible signs of health and genetic fitness. Natural selection can produce drab feathers exactly to match a habitat background and achieve near invisibility in a nest. Sexual selection classically eschews camouflage strategies, going in exactly the opposite direction to produce gaudy, flamboyant shapes and colors. This ostentation—both dangerously conspicuous and wasteful—is not an incidental by-product of some evolutionary process but is the very point of sexual selection and fitness display.

Sexual selection is sometimes regarded as a special case of natural selection, since both processes in the most general sense increase gene propagation, the survival of a genetic line. However, as Darwin himself fully appreciated, the intrinsic mechanisms of natural and sexual selection are fundamentally different. In natural selection, random mutation and selective retention work together to improve the functions of organs and bod

design required for survival: pancreas, kidneys, bone joints, blood-clotting capacity, sperm production, binocular vision, and so forth. Still within the realm of natural selection are evolved dispositions, emotions, and behavior patterns that have direct bearing on survival or the will to reproduce: fear of heights, wariness of growling animals, finding poisonous plant alkaloids bitter and repellent, a taste for sweet and fat, and sexual pleasure. A well-functioning liver and a general fear of snakes are both "healthy" in the sense that they were naturally selected for in prehistory and so remain with us today. For each one of us, our grandmothers and grandfathers tens of thousands of generations removed form a continuous line of people who were fit to live long enough to reproduce. These survivors passed their traits on to us, unlike their less fit siblings who died—of liver failure or snakebite, for instance—before they could reproduce. The unlucky siblings are our aunts and uncles thousands of generations removed; they are not our direct ancestors. These were joined in death by other of our more distant relatives, countless people and proto-people who did not find high places scary nor snakes particularly alarming, for whom fat and sweet were not especially tasty, and who in their reproductive prime took little pleasure from sexual adventures.

However, a distinctly new factor is introduced into the logic of evolution by sexual selection. Where natural selection pits a slowly mutating species against opportunities and demands of an external environment, sexual selection shifts the focus to the relation of members of a species to each other. These relations fall into two broad classes of competition. First, members of the same sex compete against each other for either the best mate or the largest number of mates. This kind of sexual selection still somewhat resembles natural selection: it typically involves aggressive fighting among males for females in a winner-takes-all situation. With elephant seals, sheer body size and constant guarding can give a large, mature male access to 80 percent or more of the females in an extensive beach territory. This kind of male competitive struggle, also observed among such animals as elk and bighorn goats, can lead to fights to the death for access to females.

Although they are a frequent topic of fictional literature worldwide, dramatic duels to the death for the hand of a lady are statistically rare among human beings. Monogamy demands assortative mating by pairs, rather than winner-takes-all, harem-building scenarios. This means that

men and women tend each to choose the highest-quality, highest-status mate attainable for them according to a variety of criteria. These criteria are part of a human mating system that aims not at crushing competing members of the same sex but at *attracting and seducing members of the opposite sex*. This second kind of sexual selection takes place in courtship, and it has affected the evolution of the human body and, more importantly for our purposes, done more to create the human personality as we know it today than any other single evolutionary factor. Just as sexual rivalry in animals is concentrated in males, and has tended to perfect offensive and defensive combat weapons such as teeth, claws, and antlers, mate choice in courtship is dominated by females, and especially in *Homo sapiens* by female feeling and discrimination. It is directed toward more subtle and charming qualities of body but also of mind; in fact, sexual selection is the driving force that has defined the very meaning of "charm" in how human beings tend to regard each other.

The reason females tend to dominate sexual selection is built into the logic of evolution. The burdens of conception are much heavier for females than for males. A girl arrives at puberty already possessing approximately four hundred eggs; she will issue one or occasionally two per month until menopause, never producing any others. When conception occurs, it is followed by a nine-month gestation, with sickness and weakened mobility. Then on to months of lactation, with the mother nurturing a hungry, mewling infant that in the end will require more years to achieve maturity than the young of any other species of animal. Men, on the other hand, may produce around twelve million sperm per hour and, in principle, may inseminate large numbers of women—and then abandon them at will. Thus the biggest recorded number of children born of one woman, an eighteenth-century Russian peasant, is reported to be sixty-nine, but that included many multiple births in twenty-seven pregnancies. The largest number of children fathered by one man, Mulai Ismail Ibn Sharif, a contemporary of Louis XIV, is said to be 1,042, naturally involving hundreds of mothers in a harem. (This number is on the low side: it is merely when they stopped counting.) A man who inseminates a low-quality, irresponsible mate still enjoys the chance of his genes being passed on at very little cost—indeed, at no cost whatsoever, if he abandons the woman and baby. For the woman, carrying and raising even one child is a very costly project. This enor-

mous difference between the situations of the sexes means there is a deep, innate propensity for women to be far more cautious and discriminating than men in choosing a mate for procreation: women not only need a mate who is healthy, they need one who will stick around, provide, and protect. (That the higher degree of female discrimination is a product of the lopsided costs of child-bearing is demonstrated by the fact that in each of those few species where the costs of gestation are borne by males—pipefish sea horses, for instance—it is males who become the more discriminating sex. This role reversal, however, is rare and occurs in no species of mammal.)

Again, the very idea that one man might, elephant-seal style, control hundreds of women in a harem is a reminder of how far some religious and political structures of the last ten thousand years have drawn us away from the prehistoric scene in which hunter-gatherer sexual preferences evolved. The small, mobile bands of human beings that came to flourish in the Pleistocene developed mate preferences based on their conditions, not ours. These tastes persist in our preferences in flirtation, courtship, and mating. They reveal themselves in experiences of pleasure and revulsion, including the physical features and qualities of personality we regard as attractive and charming—or, indeed, as beautiful—in human beings.

II

What, to begin with, are some of the outer, physical features that may make a member of the opposite sex eye-catching? One of the most famous studies of sexual attraction involves the waist-to-hip ratio. Healthy premenopausal women will have a ratio of .67 to .80—hardly an hourglass, but possibly a Coke bottle; this body shape is regarded as "feminine" and attractive by men. Women know this, and the history of fashion therefore includes methods to accentuate it with corsets and bustles. Devendra Singh, who originally studied the effect of this ratio using simple line drawings, noted that (outside of extremes of obesity or skeletal thinness) it was the *ratio* that men preferred, rather than any absolute weight or size. There is good statistical evidence for this preference being adaptive, as women who display a waist-to-hip ratio in the .7 or .8 range are significantly more fertile than women closer to the

healthy male ratio of around .9. In fact, .9 is close to both prepubescent girls and postmenopausal women. Singh has noted the extreme ratio found in depictions of Hindu goddesses (near to .3), whose supernormal waist-to-hip ratios match their supernormal fertility and sexuality, and of course the ratio also occurs in sexy women in art from Botticelli's *Birth of Venus* to Modigliani nudes.

Women, on the other hand, find men attractive who have wide shoulders and muscular upper-body mass, including pectoral muscles and biceps. This proportion is opposed to the least-liked pear shape created by narrow shoulders and fat in the abdomen and hips. Outside of primary sexual organs, upper-body musculature is one region where we see the biggest general differences between male and female bodies. Women have around three-quarters of male strength in their legs but only a third of the bench-press strength that requires arm and chest muscles. When it comes to the hand grasp, men are on average fully twice as strong as women, justifying all of those requests to husbands to twist off difficult jam lids. Nicely configured muscles over a relative absence of abdominal fat remain for women a significant potential feature in defining a beautiful man. Such beefcake may not be the best mate choice for a woman today, but along with other Pleistocene tastes, the attraction remains.

Two "mirror" asymmetries between women and men persist across cultures. One is the preference of women for older men, which mirrors the preference of men for younger women. The difference is just short of three years worldwide for actual marriages, and the averages of aspiration for the age of a spouse varies from culture to culture. The evolutionary psychologist Donald Buss records that in Zambia men prefer a wife seven years younger, while women want a husband four years older. In the United States and Canada, women indicate that they want men between two and three years older, while men want women about two years younger. In no culture are these average preferences close to equal, let alone reversed.

This age-preference psychology is explained by the fact that women seek status and resources in their mates, and these tend to accrue to relatively older males. In the Pleistocene context, the female preference for older men may have involved other factors difficult now to determine with certainty: knowledge, patience, and perhaps the more mature male's greater willingness to stick around, provide for his mate, and protect their children. For their part, men are less interested in status and resources in women and

more concerned with fertility, which is consistent with their preference for younger wives. A small survival and reproductive advantage for this age differential has engraved these preferences in the species. This has many implications and by-products today, stretching from the insurance industry to the use—overwhelmingly female—of cosmetic wrinkle creams and hair dyes against graying. The Pleistocene, it seems, was in respect of female desirability as much a "youth culture" as anything we see today.

Another persistent mirror asymmetry is the strong preference of individual women for men who are taller than they are, which is coupled with a much weaker preference of men for shorter women. While the age differential might still have uses both for men and women in choosing mates today, the height differential is obsolete for survival in the modern world, and in fact may be counterproductive, inconveniently closing off pairings that might otherwise have been excellent for both parties. Yet women's preference for height remains especially powerful, as the psychologist Nancy Etcoff has entertainingly described, showing itself in both the appeal relatively tall men have for women, whatever the heights of both, and also in the absolute appeal of male height from any female perspective. Women in personal ads openly search out tall men. Etcoff quotes *New Yorker* editor David Remnick as describing the normal situation in the lobby of a hotel where an NBA basketball team is staying as "resembling the waiting room of a modeling agency," with lithe beauties practically auditioning themselves for the players. Brian Hansen has shown that European royal portraiture tends systematically to exaggerate height by distorting normal head-to-torso ratios. The statistics on the above-average heights of American presidents reflect the situation of both tribal societies and corporation boardrooms. (I know from personal experience growing up around the film industry of Southern California that one of the most common remarks made by people who encounter a movie star on the street is "I was surprised how short he is." We tend involuntarily to envision high-status people as tall.)

Men are on average taller than women, so you would expect by that fact alone that most marriages would be of a woman to a taller husband: but in fact, marriages that reverse this norm are far less frequent than a random statistical distribution would predict. A conventional feminist interpretation of the "male taller rule" is that it stems from the desire of dominant males to tower over their subordinate mates. This flies in the

face of the fact that the preference is far more marked in women than it is in men. (This does not surprise the critic Daniel Nettle, who argues that since males are more interested in assessing fertility than females, and moderate height is a cue for both sexual maturity and fertility, men should be expected to be much less averse to feminine height than women are to male shortness. Indeed, it seems that for many short, rich men, a tall, beautiful wife is a trophy.)

Both sexes, however, agree on one of the most salient features that mark personal attractiveness: symmetry. Taking up with an unhealthy mate was a bad strategy for survival in the Pleistocene. Left-right symmetry is a statistical indicator of physiological and psychological health and so-called developmental stability, defined as an individual's capacity to grow in a normal way despite mutations and environmental deficits, such as poor nutrition, parasites, or injuries. Part of what makes it such a powerful indicator of fitness is that it is so easy to see, particularly in the face. We tend to take symmetry for granted and notice its absence rather than its presence. While left-right symmetry in a face or a body does not guarantee beauty, marked asymmetries—a withered arm, a face that droops down one side—will severely diminish it.

III

Visible physical traits form an innate bedrock for the countless transformations and fashions of how the body has come to be altered, made up, decorated, and clothed. Our initial impulse to "think physical" about the opposite sex is, however, still a long way from the actual criteria that men and women use in mate choice. While physical features will cause heads to turn, if we examine a list of the top seven most-desired traits appealed to by both sexes for establishing relationships, we find that it includes only two bodily traits: physical health and physical attractiveness (which come to nearly the same thing). On the serious question of choosing a mate, both men and women on average place *kindness* first on their respective lists, with both naming *intelligence* as number two. Men will then choose *physical attractiveness*, including the qualities mentioned earlier, as well as other factors such as clear, smooth skin and bright eyes, while women will tend to turn their priorities toward the man's *wealth or resources*. Other

criteria on the list for both sexes are *exciting personality*, *adaptability*, *generosity*, *dependability*, *industriousness*, *creativity*, and a *sense of humor*. These personal characteristics—Aristotle would have numbered some of them among the prime human excellences, and religions worldwide identify many of them as basic moral qualities—are also bedrock features of humanity. Religions may claim credit for bestowing these moral qualities on the human race, and philosophers may seek to justify them rationally or demonstrate their logical necessity, but the fact that far-flung shamans, priests, and philosophers so often agree on what they are in the first place is in itself decisive evidence of their ancient, prereligious, prerational origins. The ensemble of mental qualities included in the mating criteria is, just as much as bodily features, the result of millions of years of mating decisions made by our prehistoric ancestors.

Darwin well understood that such mental qualities had been affected—some variously honed and accentuated, others diminished—by a process of sexual selection similar to the selective modifications brought about by animal breeders in domesticated species. His comparison, which has hardly been noticed by later commentators, is not as odd as it might at first seem: he argues in *The Descent of Man* that the domestication of originally wild animals in human prehistory was largely "unintentional," a process in which man "preserves during a long period the most pleasing or useful individuals, without any wish to modify the breed." Our pastoral ancestors, in other words, had no conscious plan for how species they herded or worked with would look or behave in a hundred generations. A Pleistocene hunter might feed and tolerate near his camp a wild dog that is docile toward him and his family but fierce in confronting strangers or other animals. An early Holocene herder would keep for milking submissive beasts that tended not to stray far from camp, and slaughter more independent or troublesome stock. Selective domestication of animals by humans occurred over many thousands of generations of deciding which animals were more desirable to keep than to eat.

In a manner that Darwin calls "closely analogous," human beings in prehistory *practiced selective breeding on themselves* by their own mating choices—essentially, it is accurate to say, domesticating their own species. Take, for example, the evolution of language. Speech as a medium of communication and practical planning would have been highly adaptive in prehistory. Speech is also one of those areas where natural selection

gave the capacity a start, but sexual selection led to its full and powerful flowering as the distinctly human phenomenon. Darwin himself suggests that the oldest evolved roots of human speech were expressive warning cries used to signal when the primate group is under threat: this capacity would improve survival and would have been enhanced by natural selection. However, sexual selection would have extended this ability of early man, Darwin argues, to use "his voice in producing true musical cadences, that is singing, as do some of the gibbon-apes at the present day":

> We may conclude from a widely-spread analogy, that this power would have been especially exerted during the courtship of the sexes,—would have expressed various emotions, such as love, jealousy, triumph,—and would have served as a challenge to rivals. It is, therefore, probable that the imitation of musical cries by articulate sounds may have given rise to words expressive of various complex emotions.

Darwin is not denying the factual communicative utility of language and its role in natural selection. He does, however, find its potential to express emotions in courtship contexts a plausible source of part of its early evolution. By suggesting the work of sexual selection on the evolution of language, Darwin is also suggesting another possibility: over and above its utility for Pleistocene survival, *language use became a fitness signal*—a marker of health and intelligence.

Any hunter-gatherer band that could communicate within the group on the whereabouts of water or of game, or could pick over the past in detail and plan raiding sorties, would possess an extraordinary advantage over competing groups without language (this is one of the persistent hypotheses about why our forebears may have exterminated the Neanderthals). But it is inadequate to analogize language only to a tool—say, a bread knife or the assorted blades of a Swiss Army knife. If knives are the analogy, language is better thought of as a saber with a jewel-encrusted hilt and a blade with intricate gold inlay. You are free to whittle a stick or cut bread with such a knife, but its meanings and uses extend far beyond utility for survival.

Consider vocabulary. Nonhuman primates have perhaps twenty distinct calls. The average speaker of a modern language, on the other hand,

knows sixty thousand or more separate words, learned spontaneously at an average of ten to twenty every day between the ages of about three years to eighteen. Would survival in the Pleistocene have required and thus enabled the acquisition of such a stupendous vocabulary? Certainly not; and in fact, 98 percent of our speech even today uses only about four thousand words. I. A. Richards and C. K. Ogden's Basic English for international communication made do with only 850 words; as Miller points out, textbooks in biology and astronomy have been written in Basic English. It is clear that no more than a couple of thousand words at most would have been adequate for communication in the Pleistocene.

The excess vocabulary of sixty-thousand-plus words is explained by sexual selection: the evolutionary function of language is not only to be a means of efficient communication but to be a signal of fitness and general intelligence. The best single health index, outside of obvious disease symptoms, is body symmetry, but the correlation between body symmetry and intelligence is only about 20 percent. Vocabulary size, and how effectively and creatively vocabulary is used, is much more clearly correlated to intelligence, which is why it is still used both in professional psychological testing and more generally by all of us automatically to gauge the cleverness of another person. Vocabulary accurately used is a handy quantitative measure with a potential to reach into the psyche in order to ascertain a person's mental powers. Our sensitivity to vocabulary grasp goes hand in hand with a general sensitivity to the ignorant or unintelligent misuse of language, which explains why audiences enjoy popular comic characters such as Mrs. Malaprop, or those unlettered police constables in Shakespeare who make such an entertaining mess of trying to use legal terminology that is beyond their grasp. Just as the evolutionary implications of good-sized biceps or a youthful complexion ensure that body-building centers and the cosmetic industry will not soon be going out of business, so the fitness-signaling functions of language use mean that books and audio programs for "vocabulary building" are bound to have a permanent market.

Vocabulary is but one aspect of language that gives us a view into another human mind: grammar, syntax, word choice, appropriateness, coherence, relevance, speed of response, wit, rhythm, ability to toy with words, and originality all play a part. Taken together, these skills and qualities of mind constitute *eloquence*, and the admiration of eloquence is solidly on

the list of human universals. This shows itself in a cross-cultural approval of the capacity to speak well publicly, but it is also critical in the most intimate context of courtship—a theme trenchantly explored by Edmund Rostand in *Cyrano de Bergerac*. Qualities such as vocabulary size, accurate syntax, and linguistic creativity are, despite the fame of Rostand's play, not often remarked as appealing to profound mating preferences. In fact, excellence in speech is treated almost as an embarrassment by many professional linguists who, perhaps out of a sense of political/linguistic egalitarianism (or a fear of being perceived as grammar-enforcing schoolmasters), have tended to dismiss high linguistic skill and "correctness" as a mere social class marker. But the human interest in sophisticated and original language use is much deeper than any social convention.

Miller remarks that it would be surprising to find a personal advertisement that read, "Single female seeking man who knows fifty thousand useless synonyms." However, he reports that couples in long-term relationships do tend to have approximately the same size vocabulary and that this pairing-equality among couples is indicated more strongly than are other traits. Vocabulary size and skill in language use are therefore further aspects of assortative mating, whereby individuals choose the best available mates who will stoop to their level—"the best I can get who'll settle for me." Thus a linguistically sophisticated lass may shudder to hear a chap say, "My criteria for a decent car is that it gets good mileage," and tell him that, alas, she is very busy next weekend. Note that this is emphatically not a failure of communication: she understands perfectly well what he means by the sentence. However, what he has signaled—as opposed to intentionally communicated—is that he has not caught up with Greek plural and singular forms that have migrated into English, and that he is therefore perhaps not her kind of guy. He can be consoled, whether he knows it or not, that there are any number of young women out there who, having no idea themselves of the difference between "criteria" and "criterion," will be impressed by his sound opinions on the subject of gasoline mileage. Each to his own level of competence: that is how assortative mating works.

In terms of sexual selection, vocabulary size—competently using not just the words "green" or "blue," but being able capably to employ "navy," "jade," "azure," "ultramarine," "cerulean," "sea green," "lime," "turquoise," "chartreuse," "cobalt blue," "forest green," "sapphire," "aquamarine," and so

on—is an ornamental capacity analogous to the peacock's tail. Such enhanced, decorative language use was pointless for Pleistocene survival, but it is as intrinsic to human life as other mental traits that have been created and enhanced by sexual selection. These include the virtues of being able to make and appreciate jokes, being able to spot and make use of metaphors and original analogies, having a good memory, or being able to tell a narrative story characterized by relevance, coherence, and drama. These features of language use are noticed and prized by human beings as direct signals and displays of mental quality (and indirect, though weaker, indicators of physical health). Even while natural selection was refining the human species against a background of "nature red in tooth and claw," improving the function of the heart valves or instilling physical pleasures and phobias, sexual selection was building a more interesting human personality, one that we have come to know as convivial, imaginative, gossipy, and gregarious, with a taste for the dramatic. Much of this mental and linguistic talent is directed to the human social group, but it is also a central area of interest in courtship contexts, a point that Darwin grasped in his first text on the subject. Miller rightly observes what follows from this: the number-one topic for poetic and sung language worldwide and through history is love. This is exactly what you would predict if poetry recited or sung had evolved in the context of courtship as a kind of cognitive foreplay. In the sense bequeathed to us by sexual selection's effects on the evolution of speech, love is poetry's natural subject.

The picture that sexual selection paints of our Pleistocene ancestors may seem unfamiliar, but there are important reasons for this. Archaeology gives us a history that is largely one of stones and bones, written in terms of fossilized skeletal remains and hard objects that accidentally survived in garbage heaps and fireplaces, or in a few cases were saved from destruction in untouched caves or the odd grave. It is a wondrous record of artistic achievement, however tiny it is. Luckily, we have the cave paintings from such important sites as Altamira, Lascaux, and Chauvet going back perhaps thirty thousand years. There are carvings of animals, a few human figures, such as the Venus of Willendorf, or the incredible Löwenmensch from Swabia that may be thirty two thousand years old, and shell necklaces and traces of cosmetic ocher use that go back as far as eighty thousand years. Some of the animal representations are astonishingly sophisticated, and there is Pleistocene jewelry that looks as though it might

have been bought last weekend at a local craft fair. There are bone flutes from the Pleistocene that are the earliest musical instruments. The so-called Ice Man, nicknamed Ötzi, hacked out of an Alpine glacier in 1991, is 5,300 years old. Ötzi lived just before the start of the Bronze Age, but he may represent older forms of life that stretch back to the Pleistocene. He was wearing meticulously tailored clothing of animal hides and a bearskin hat with chin strap and had snowshoes, a sewn bag with hunting accessories, and a fire-starting kit. These artifacts plus his many tattoos show skill and style in their construction. But of Ötzi's language, singing, poetry, or dancing, we know nothing whatsoever.

Yet if we combine what we can reconstruct about Pleistocene existence with the large ethnographic literature on hunter-gatherer societies in the nineteenth and twentieth centuries, we can deduce a fairly clear picture. The lives of many Pleistocene peoples were doubtless brutal and short. But for others, especially in Europe in the period of the receding glaciers and global warming at the end of the last Ice Age, there was abundant food and leisure—free time that was spent not only painting caves but presumably singing, telling stories, making jokes, improvising poetry, dancing, and making love. If Pleistocene communal life was similar to recent hunter-gather existence, there would have been a tendency for men's artistic artifact production to concentrate on carving hard materials, such as stone, hardwood, and bone, while women would have channeled their efforts into cloth and fiber artistry. Outside of some surviving jewelry, we know little of personal adornment, but it is likely that Ötzi's tattoos continue a persistent tradition of face and body painting. Elaborate hair styling would have likely been a feature of Pleistocene life, but again we know almost nothing of it. Piecing together the whole picture of the fifty thousand years or so immediately preceding the invention of cities and agriculture, it is inconceivable that Pleistocene people did not have a vivid intellectual and creative life. This life would have found expression in song, dance, and imaginative speech—skills that matched in complexity and sophistication what we know of Pleistocene jewelry, painting, and carving.

Darwin's concept of sexual selection offers to us a startlingly new metaphor for the mind, one that has at least as much to say about the origin of the arts as natural selection does. The ancients understood mind on the analogy of a mirror or a blank writing slate. Descartes

followed the traditions of his own religion in offering a picture of mind as an embodied ghost. For Hume it was a bundle of perceptions, while in Freud's view the mind came to resemble a high-pressure hydraulic system. More recently, the analogy of the computer chip has come to dominate discourse about the mind. If we combine the computer model with Darwinian natural selection, we so far have a picture of the mind as a strategizing, planning, problem-solving machine that cleverly survived in the savannas with well-honed computational algorithms.

Darwinian sexual selection, however, presents a radically different model of mind. As Miller so nicely puts it, the mind in sexual selection is best seen as a gaudy, overpowered Pleistocene home-entertainment system, devised in order that our Stone Age ancestors could attract, amuse, and bed each other. Of course, bed was not the only objective, since the qualities of mind chosen and thus evolved in this process of human self-domestication made for enduring pairings, the rearing of children who themselves might survive, and thus the creation of robust social groups. But the gadgets and gizmos of the home-entertainment model of mind—in electronics stores they are even called "modules"—are designed for much more than just recording accurate knowledge or planning hunting parties. They are about telling stories or inventing ideologies that will captivate an audience. This sexually selected mind has its record and playback functions, along with a library of stories and anecdotes in audio format, and a dictionary with an impressive thesaurus (for meanings and synonyms and not, needless to say, for spelling in Pleistocene). Better even than any modern home-entertainment unit, the human version not only archives and reproduces funny stories or metaphors but makes them up on the spot, demonstrating wit and originality of a sort yet to be matched by any computer. Provide this sexually selected mind with a piece of wood and it can use its hands and tools to carve an animal; for it, a cave wall can be a perfect place to paint a whole menagerie. It has penchants for the oddest activities—such as its liking for jokes, which it uses to induce strange but highly pleasurable temporary convulsions in itself and others.

From the Greeks through the Enlightenment and on into the computer age, every prevailing analogy for the mind has captured some important aspect or function of it. But none even begins to explain the mind as the creative, exuberant, imaginative, romantic, wasteful, storytelling,

witty, loquacious, poetic, ideology-inventing organ it also is. Darwin's *Descent of Man*, by regarding the mind as a sexual ornament, presents us with a first step toward explaining those features of the human personality that we find most charming, captivating, and seductive. Adding sexual selection to natural selection, we begin at last to see the possibility for a complete theory of the origin of the arts.

IV

An essential requirement of Darwinian fitness indicators is that they function reliably and honestly: they must pose authentic tests. If they can be faked, they are useless as indicators. If unhealthy peacocks can grow massive symmetrical tails, the tail loses its value as an indicator. With *Homo sapiens*, a big vocabulary skillfully used only works as a signal of intelligence or competence if it is difficult for less intelligent and capable people to attain it. Sexual selection thus creates a psychological arms race in which the signaling capacity of one sex is pitted against the critical, discriminating powers of the other. That is why we have elevator shoes and push-up bras. That is what the cosmetic, body-building, and vocabulary-building industries are largely about: accentuating, highlighting, or faking desirable signals.

Sexual selection theory sees urges to improve or enhance fitness signals by any available means as utterly natural strategies: they are straightforward Pleistocene adaptations. In this, sexual selection theory goes dead against many forms of cultural constructionism that have prevailed in intellectual discourse for the last half century. For instance, it has for years been widely argued that women dye their hair and apply wrinkle creams only through cultural pressure, and that wrinkles and gray hair are "natural." A Darwinian view maintains that, on the contrary, a woman's desire to look younger, like a man's desire to appear stronger, taller, or more wealthy, is adaptive and innate. Such strategies will take different forms in different cultures and epochs, but they are prehistoric in their origins. Contrary to gender theorists who have tried to argue that women's use of creams and dyes makes them dupes of the cosmetic industry, the converse is more the case: industries that produce lipsticks, mascara, and hair colors only exist because the values of youthfulness and "looking

good" are products of evolution. Approve of them or not, these values persist because they represent our deeper, innate nature.

The general rule is that skeptical sensitivity to detail and nuance about a sexually selected signal is bound to arise if the signal is open to any degree of fakery. Whatever the limitations of their avian intellects, peahens are unquestionably more severe and perceptive critics of peacock tails than any human observer could hope to be; those tails are important to peahens in ways they can never be to us. Similarly, human abilities to make critical distinctions in responding to evolved cues and signals are effortless and acute. Human critical discrimination in signals requires very little training to get it going: it is spontaneous, often a component of gossip, and even pleasurable—always the mark of an evolved capacity. "That suit's an Armani? I don't believe it." "I can't tell if she dyes her hair, but it's gorgeous." "How can I take seriously a so-called professor who keeps saying 'ekcetera'?" "She shouldn't try to get rid of those crow's feet—they give her face character." "I wonder if that's a real tan?" "Terrific! It makes you look twenty years younger!" "Did you notice his elevator shoes?" "It was a nice meal, but she made it out of packaged food." "He actually only knows a few French phrases." "Sure, she's a doctor—of homeopathy."

Human obsessions with what is fake and what is genuine in skill, eloquence, beauty, and intelligence merge into another fitness indicator that we have already encountered high on the female list of mate-selection indicators and rather lower on the male list: wealth, along with its closely associated feature of social status. Women normally cannot help paying attention to how rich a man is—or how potentially rich, if he has not yet set out on a career—as well as his conscientiousness, social standing, and generosity. As a fitness indicator, wealth is open to dishonest signaling, and women are especially keen to distinguish honest wealth signals from faked or exaggerated ones. From the standpoint of sexual selection, whether that really is a Rolex watch or an authentic Princeton diploma is not trivial. Selective pressures in the Pleistocene seem to have combined with cultural expressions from the Holocene to put in place elaborate systems of resource-demonstration rules that are intuitively recognized by females—and ignored by males at their reproductive peril.

How does resource-demonstration work in courtship? Here is where the spontaneous, universal characteristics of an adaptation make themselves apparent. One of the best ways for the boy to prove he has

resources is to give the girl something that is both expensive and useless. Hence flowers: they wilt, and except to look pretty have no use. They can communicate "I love you," but more important is what they signal: "I have the resources to buy thoughtful and beautiful but completely useless things for you, my dearest. And please also enjoy these fine, expensive Belgian chocolates." Consider the alternative: if natural selection governed courtship, the boy would show up at the girl's apartment clutching, instead of flowers and chocolates, a lovely potato, or perhaps a couple of thick steaks, or, being even more inventive, a new ratchet wrench set for her. After all, natural selection favors practicality and efficiency. (The young couple would then go out to a serve-yourself, all-you-can-eat restaurant, since natural selection also favors economy.)

That we smile at this indicates how counterintuitive it is. The real world, operating according to the imperatives of sexual selection, works very differently. If the male is serious, he will take the female to a lavish, overpriced restaurant serving mere smidgens of food. He will order champagne and make sure she notices his large tip. (The all-you-can-eat cafeteria comes later: after they've married and have to feed the children.) With respect to proving access to resources and commitment, nothing beats the gift of a diamond, particularly as an engagement ring. Diamonds, since they are both expensive and useless, are indeed a girl's best friend. They prove one of two conclusions: either he has the resources he claims—money to waste on useless minerals—or, if he does not, he is so committed that he has gone into debt (or robbed a bank, which must also be attractive, since Mafia chieftains do find their gun molls). Any way a woman looks at it, the gift—not just the promise—of a diamond marks a significant step in a courtship situation. (The De Beers slogan, "A diamond is forever," is widely regarded as the most inspired single advertising statement of all time, and Darwinian theory explains why: it connects serious wealth display with the loving commitment women seek in establishing a household.)

V

Thorstein Veblen, the economist who a century ago coined the phrase "conspicuous consumption," argued that wealth display, including squan-

dering money on pointless possessions, was a major component of human cultures from the ancient world to the present. He also argued, more controversially, that high cost and waste are intrinsically mixed with our concepts of art and beauty. Veblen's central claims about people's responses to beauty are most forcefully (and cynically) expressed in the chapter entitled "Pecuniary Canons of Taste" in *The Theory of the Leisure Class* (1899). Here, in a move that foreshadows Arthur Danto's favorite argumentative strategy, he has us imagine two nearly identical artifacts: a pair of spoons, one of solid silver, appearing to be handmade, and costing perhaps twenty dollars (a lot of money in 1899), the other machine-made out of silvery base metal and costing twenty cents. As eating utensils, each is as serviceable as the other. We can also imagine, Veblen proposes, that as sheer visual objects (seen in terms of "intrinsic beauty of grain or color"), the spoons are identically attractive. Now suppose, Veblen says, we discover on careful inspection that the signs of having been wrought by hand are in the case of the silver spoon actually faked: the spoon, though made of silver, turns out to be a machine-made object that cleverly imitates the small irregularities of a handmade artifact. Immediately, he observes, its value will decline by as much as 90 percent. Moreover, even if the spoons were visually indiscernible and only the weight of the cheaper utensil gave it away, our sense of the overall beauty of the objects would still be affected by knowing that one was mass-produced, the other handmade.

With regard to the concept of beauty itself, Veblen is not entirely clear or consistent on what his analysis means. Sometimes he seems to be saying that costliness and beauty, while logically distinguishable concepts, are inevitably bundled together by human nature in our minds: when an observer realizes that what he thought was handmade silverware is actually something stamped out by a machine, the gratification he derives from "its contemplation as an object of beauty" is instantly diminished. But Veblen also says that our regard for something beautiful "is, commonly, in great measure a gratification of our sense of costliness masquerading under the name of beauty." This is a somewhat different idea: if the association of beauty and expensiveness is just a masquerade act, then we would be right to reject expensiveness as a regrettable—indeed, reprehensible—confusion that pollutes our sense of beauty. Most theorists of beauty from Kant through the twentieth century would heartily agree: to think that our response to a work of art should

depend on its market value is today regarded as gross vulgarity. However, if we are looking back not only through history but also to the prehistory of art and decoration, we might come closer to an understanding of uncomfortable facts that are bound to irritate this modern aesthetic sensibility. The very idea that costliness and art are intrinsically connected in our aesthetic psychology may be a disagreeable possibility, but if it turns out to be true, it is a fact that is better faced than buried.

Veblen's example of costliness in this case involves monetary value. Costliness in hunter-gatherer societies would have been measured not with money but in terms of time, resources, and the expenditure of labor. In sexual selection, these factors involve what Amotz and Avishag Zahavi have called in the realm of animal ethology a manifestation of the "handicap principle." According to this way of formulating sexual selection, an animal shows its genetic fitness to a mate by squandering resources that a less fit animal could not afford to waste: the endless singing of a mockingbird and the intense red of a healthy stickleback, not to mention the peacock's tail, are handicaps, proving, so to speak, that "I can take on the world with one hand tied behind my back." Extended to human behavior, the Zahavis' handicap principle throws into clear relief the conspicuous wastefulness described by Veblen. The best way for an individual to demonstrate the possession of an adaptive quality—money, health, imagination, strength, vigor—is to be seen wasting these very resources.

The Zahavis' way of describing sexual selection has been supported in economic terms by the anthropologist Eckart Voland, who contrasts the useful traits evolved by natural selection with the fitness signals of sexual selection: "For useful traits, their production costs are disadvantageous, but unavoidable. With signals [in sexual selection], however, the additional costs are what count. Contrary to long-held economic rationality, demand increases together with its price. Useful traits do not lose utility if their price falls. Signals, on the other hand, lose their function if their production becomes cheap." It follows that in the human realm, people will be ever on the lookout for ostentatious ways to squander wealth: building impractical mansions, driving pointlessly expensive cars, or carrying three-thousand-dollar handbags.

If we extend the various suggestions of Darwin and his followers into the realm of art, we can see ways in which costliness and waste impinge on beauty. I would summarize the implications as follows:

- Works of art will frequently be made of rare or expensive materials: silver and gold, clear jade, marble that is difficult to transport, jewels, fine hardwoods, unusual pigments, and rare dyes, such as the Tyrian purple of classical antiquity.

- Works of art should be very time-consuming to create. In that sense, they may demonstrate that the maker has leisure—conspicuous leisure—in a way that indirectly indicates that he possesses wealth or status.

- Even if a work of art is quickly executed, the skills to make it should have been time-consuming or difficult to acquire. (Admired skills are often manual, showing fine motor control or dexterity: "He'd painted every hair" or "She never missed a note.")

- The created work of art may be more impressive if it is remote from any possible use. Expensive and useful can be very pleasant, but expensive and useless might well be much better.

- A sense of waste, and therefore handicap, can be emphasized by channeling resources into work that is this fleeting: the perfect centerpiece for an expensive dinner party may be a poignantly lovely ice sculpture. Marble is fine, but ice can be even better from the standpoint of signal theory.

- In addition to time, works of art will have required special intellectual or creative effort to create. The sheer brains and energy needed to produce Picasso's or Wagner's oeuvre is bound, like the Pyramids, to impress us. (Speaking of handicaps, consider the awe inspired by Beethoven's deafness.)

Imagine with me for a moment that our world was just as it is today, except that the earth had a slightly different geology: diamonds were as common in my imaginary world as beach sand is in ours, while jade was as scarce as diamonds. In such a world, would diamonds—normally used as ship ballast or as in-fill for building foundations—be laboriously cut and employed in jewelry? This is unlikely: sexual selection theory would suggest that in such a world a "sublimely beautiful diamond tiara" would be an absurdity, something like a "sublimely beautiful plywood-and-sequin

tiara." If jade were so rare, however, we could well imagine that a tiara of jade inlay in gold might be regarded as exquisitely beautiful. Diamonds in our imagined world might be used in children's toys or reflective road signs, but they would never figure in magnificent jewelry. As it so happens in our real world, diamonds are both rare and capable of being used for dazzling jewelry. (This, incidentally, is in line with what little is known about the early history of bodily adornment. Kathryn Coe observes that some of the earliest known jewelry incorporates materials that were transported—perhaps in trade—over long distances.)

When Veblen says, "The marks of expensiveness come to be accepted as beautiful features of expensive articles," however, he is not only talking about costliness of materials: the sense of an object's cost, and therefore its beauty, is increased also by awareness of a slow, painstaking means of production. "Handmade" will therefore always be an honorific designation, superior to "machine-made" in the beauty stakes, irrespective of the fact that the industrial product may be smoother, more symmetrical, or error-free. Error-free machines are much less interesting to us than error-free hands. In trying to connect the concept of beauty with technical show, the anthropologist Alfred Gell recounts an early personal experience. As a child, he was deeply impressed by a two-foot-high matchstick model of Salisbury Cathedral. This was "a virtuoso example of the matchstick modeler's art . . . calculated to strike a profound chord in the heart of any eleven-year-old." The young Gell well understood the nature of the materials—glue and matchsticks—"and the idea of assembling these materials into such an impressive construction provoked feelings of the deepest awe." He says that from a "small boy's point of view it was the ultimate work of art, much more entrancing in fact than the cathedral itself." Many of us have experienced similar moments of awe as children and, yes, later on as adults. That it is regarded as unsophisticated to find beauty in such humble skill displays as matchstick construction shows how contemporary art-theoretical thinking has estranged us from deep sources of aesthetic satisfaction, including the admiration of craft.

There is an enchantment in objects meticulously crafted by the human hand, but at the same time we should not forget that in the nineteenth century, the Gilded Age when Veblen was writing, conspicuous waste in art included piling on pointless and to us today grotesque ornamentation:

think of the high-labor investments in decorating Victorian furniture with meticulous floral carvings, inane but complicated wood inlays, and the extensive use of gold, silver, and ivory detailing. That kind of ornamental excess today is largely out of fashion, but conspicuous waste is still an important factor in the art world—just like every evolved interest, whether we philosophically approve of it or not. It can take many forms. For instance, it is present in the postwar tendency toward the production of gigantic paintings that practically need to have new museum wings built around them. If the wall space taken up by the huge canvas in a museum is in an expensive area of a large city—instead of being in, say, a defunct linen factory in the provinces that has been turned into an art museum—so much the better. None of this denies that the painting might otherwise be a fine work of art; it is only to acknowledge that the work's size and the costs of display already proclaim its seriousness and beauty. If this application of Veblen's thinking and the handicap principle to recent art history is correct, we may expect that, just as many pieces of ornate Victorian furniture have ended up as white elephants in the eyes of later generations, too heavy and awkward even for junk shops, it may be that curators of the future will be left wondering how to dispose of those 1970s mega-canvases, such as the gigantic portraits by Chuck Close that take up so much space in New York's Metropolitan Museum.

Thorstein Veblen's view of modern social life encroaches on aesthetic theory in ways that the modernist sensibility is bound to find uncomfortable. Kant set the direction for modern art-theoretical thinking in explicitly wanting to expunge from "pure" aesthetic experience, as he called it, such degrading factors as "finery," mere ornamentation: "if the ornamentation does not itself enter into the composition of the beautiful form—if it is introduced like a gold frame merely to win approval for the picture by means of its charm—it is then called *finery* and takes away from the genuine beauty." Kant even rejected as proper constituents of aesthetic form such values as color and emotion. His philosophical followers—through Clive Bell and Clement Greenberg up to the present—may not have gone that far, but they have continued to regard pure form as what counts in art and anything else as a mere cultural excrescence to be scraped off with the intellectual equivalent of a wire brush. Bell not only insisted that represented content was irrelevant to a proper aesthetic response to painting, he claimed that proper aesthetes

don't even see content: "You will notice that people who cannot feel pure aesthetic emotions remember pictures by their subjects; whereas people who can, as often as not, have no idea what the subject of a picture is. They have never noticed the representative element, and so when they discuss pictures they talk about the shapes of forms and the relations and quantities of colours."

Have you ever met anyone who, having seen a painting, could only remember blue rectangles, green mottled areas, and pinkish brown smudges but couldn't recall if they were cars or trees or people? Neither have I, but then Bell would just say that we move in the wrong circles. This loopy quotation—which describes people who "feel pure aesthetic emotions" as aphasics who might be entertainingly explained by Oliver Sacks—shows how far aesthetic formalism has been willing to go in trying to shame people out of admitting to such pleasures as enjoying the represented content of a work of art.

Rejecting modernism's tendency to scold naive taste, however, does not entail that we must champion the cause of popular values or embrace those aspects of the art world so cynically described by Veblen. Clive Bell knew painting much better than Veblen, and his wonderfully astute essays repay study by anyone who cares about art, even when their conclusions reduce to absurdity. While evolutionary psychology and prehistoric economics nicely explain why someone would stroll through a museum crassly remarking on how much the paintings are worth, they do not justify such behavior. We are still entitled to teach our children that although the money of the art market and the beauty of art works are connected, it is mainly the rare beauty of a Rembrandt portrait that causes it to be worth a lot of money, rather than its market price causing it to be beautiful—that understanding immediate visual beauty is the key. And that, yes, quite lovely jewelry can be made of materials more modest than gold and diamonds.

Still, if even to the smallest degree, rarity and expense add to beauty and cheapness detracts from it, it is important that we know our innate sense of artistic fact, rather than deny it or pretend it is merely social. The familiar Müller-Lyer illusion is worth recalling in this respect. The two lines—one with arrow points at the ends, the other with the arrows opening out from the ends of the line—look to be of different lengths even though they are exactly equal. A fascinating aspect of this illusion

is that even after it is explained and fully understood, *one line still looks longer than the other.* The "angles out" configuration corresponds to the line being farther away, and our three-dimensional vision therefore insists on telling us that the line must be longer: our cognitive system evolved to make this jump in visual reasoning, and it will not be denied. In the same way, we might be aware of how rarity or cost plays into our pleasurable response to the specialness of a necklace or a painting, and still be unable to ignore this component of experience, even if we believe it to be rationally unjustified. The point is to know why such deep feelings persistently appear in aesthetic life, without either grimly suppressing or blithely accepting them.

Veblen's economic and aesthetic insights have been regarded by many commentators over the last century as being essentially about capitalism and the distortions it imposes on human life. This is wrong. His examples are drawn as much from early European history and tribal ethnography, such as the Kwakiutl potlatch, as they are from the hypercapitalism of the Gilded Age. His chapter on aesthetics contains admiring references to Hawaiian feather cloaks and the elaborately carved handles for Polynesian adzes, both of which he adduces to support his case that uselessness is connected to beauty. Veblen wrote not about local or historically unique situations but about the general human condition as he understood it. He put much research into analyzing cultural constructions, but his target is the human nature that underpins them: persistent innate tendencies that are spontaneously manifest in widely separated cultures and historical epochs.

Seen in this light, however, there is no reason to accept that we are doomed forever to respond to art in terms of costliness, conspicuous waste, or its bearing on social status. Pleistocene landscape preferences are just as innate but need not control our tastes in landscape painting or even our choice of a calendar. Once we understand and know an impulse, we can choose to go along with it or we can resist it. There are elements in the art world as described by Veblen—for instance, the intimate association of art with money—that ought to disturb us. But better we should know this devil than deny it or pretend it is but a product of capitalism.

In the same way, there is no reason to deny the sense of wonder we derive from a demonstration of special skill or painstaking labor, whether

occasioned by a cathedral built of matchsticks, a soprano's high E-flat, or a photorealist painting of a bowl of ice cream. Our innate aesthetic tastes have many constituents, including not only awe at skill displays but intrinsic connections with wealth and therefore with social status. Like our innate moral sentiments, these tastes ought to be open to endless rational reconsideration and judgment. Kant had it right: the experience of art is a practice of contemplation—in it, we need not be slave to our innate proclivities, our passions. Even in free play, our intellect counts.

VI

In a curious but oft-quoted utterance, Wittgenstein said, "The human body is the best picture of the human soul." Unless this is intended as some kind of gnomic defense of psychological behaviorism, it's certainly wrong. The best picture we can have of the human soul is gained by listening to what a person says and how he says it. Language—the human voice, and writing—is not only a communication medium ("Looks like rain today"; "There's game over the next hill") but is an expressive and creative instrument, revealing the peculiar insights, individual interests, humor, and special talents of an individual. As a form of cognitive foreplay in courtship, language can give us, in Geoffrey Miller's words, "a panoramic view of someone's personality, plans, hopes, fears, and ideals." If Darwin himself was right in his own speculation about the origins of language, foreplay of a sort is indeed where it began: as a means for first arresting the interest of members of the opposite sex and then demonstrating something to them. On this speculation, ordinary descriptive communication would have come later. Language originated in grabbing attention and expressing something compelling. Miller argues that this aspect of language, verbal courtship, spreads throughout cultures and has come to be associated with many social skills and capacities: "Language puts minds on public display, where sexual choice could see them clearly for the first time in evolutionary history."

But what began in the courtship context seeped into areas of human life far removed from sex. Art in the most general sense is also an extension of this capacity into imaginative realms of storytelling, picture-making, crafting artifacts, music, poetic language, joke-telling, dance,

and ordinary banter. Art is not the only extension of displays of human skill and expressiveness: areas as diverse as politics, sports, and science have all taken human expressive intelligence in radically different directions.

Explaining these developments by connecting them with sexual selection and the rise of language does not make them at root "all the same," or all about sex. This was one of Freud's many errors. He sensed, as many of us do intuitively, that at some deep level much art is somehow connected with sex. He thought it could be found in his libidinal drives, in which surplus energy is the source of sexual display or, even more improbably, in those Freudian systems of symbolism in which everything convex stands for some tumescent body part. Many "letting off steam" theories of art make the same kind of error: they fail to see that running around the block is a better way of letting off energy than composing a string quartet. What sexual selection in evolution does is give us an explanation of why so much human energy has been exhausted on objects of the most extreme elegance and complexity—not just the massive symmetry of the Pyramids, but the poignancy of Shakespeare's sonnets or the Schubert Quintet in C.

Sexual selection explains the will of human beings to charm and interest each other. At the same time, it explains why we can regard each other now and again as so charming and interesting. We find beautiful artifacts—carvings, poems, stories, arias—captivating because at a profound level we sense that they take us into the minds that made them. This sense of communion, even of intimacy, with other personalities may be erroneous—even systematically delusional—but the self-domestication of sexual selection was not about truth; it was about living the richer sociality that would carry on the human species and allow it to flourish. That too defines success, for the survival not just of the physically strongest but of the cleverest, wittiest, and wisest. If along the way this amazing process has given us Lascaux, Homer, Cervantes, Chopin, Tolstoy, Stravinsky, and *The Simpsons*, as well as minds to appreciate and take pleasure in them, then so much the better.

127–30 Polti's list is not in print, but is available on the Web [w/s polti dramatic situations]. Quotations are from Booker (2004); the Jung remarks are at p. 12.

133 For a philosophical view of video games as an art form, see Tavinor (2005).

CHAPTER 7: ART AND HUMAN SELF-DOMESTICATION

136 For Darwin on why peacocks made him sick, see Cronin (1991), p. 113. The letter can be found on the Web [w/s darwin gray peacock sick]. Darwin's actual words are a lighthearted aside in a personal letter. I note that they are now idiotically quoted on creationist Web sites as evidence that Darwin was unable to explain the wonders of nature.

137 On convergent evolution, see Miller (2003).

141 On the waist-to-hip ratio, see Singh (1995) and subsequent discussions [w/s waist hip singh].

142–44 For male upper-body mass, see Etcoff (1999). Etcoff also discusses the female age lag and the preference for tall men, as does Buss in his very clear exposition (Buss 1999). The David Remnick quotation is in Etcoff (1999), p. 77. Brian Hansen's results (1998) on body ratios in portraiture were presented to the 1998 meeting of the Human Behavior and Evolution Society at the University of California, Davis. For the more accepting attitude men have toward taller women than women have toward shorter men, see Nettle (2002); this article is on the Web [w/s women height nettle]. On symmetry, see Buss (1999), pp. 118–20.

144–45 General mating criteria are discussed in Miller (2000) and (2001), as well as in Buss (1994) and (1999). For Darwin on "unintentional" domestication, see Darwin (1896), p. 614. *The Descent of Man* can be downloaded from the Web and searched with ordinary desktop search functions.

146 A word should be said on behalf of Friedrich Schiller, whose 1794 *Letters on Aesthetic Education* imaginatively suggest aspects of sexual selection eighty years before Darwin. Schiller found the concept of play central to art, which with his many comparisons to animals he tends to view as a natural phenomenon. He also regarded the emergence of high culture out of barbarism as being largely a matter of females exercising mate choice. See Schiller (1967), especially Letter XXVII; on the Web [w/s denisdutton.com schiller]. Brian Boyd (2009) stresses the importance of cognitive play in the arts.

147–48 The issue of vocabulary size is emphasized by Miller in chapters 10 and 11 of *The Mating Mind* (2000). Miller's exposition of sexual selection is both eloquent and to my mind completely in line with Darwin's suggestions in *The Descent of Man*.

149–50 A provocative new look at surviving cave art has been produced by Guthrie (2005). Although there have been major discoveries since he wrote his book, Pfeiffer (1982) is still a fine summary. There is much material on the Web about Ötzi, [w/s otzi iceman].

154–56 Veblen's spoon example is at (1994), pp. 78–79; the Zahavis' book is now an established classic in sexual selection theory. Voland's quotation is at Voland (2003), pp. 241–42.

158 For Kathryn Coe on carrying materials for far distances, see Coe (2003). For Gell on the matchstick cathedral, see Gell (1992), pp. 48–49. Marek Kohn (1999) and Steven Mithen (2003) have argued that handaxes—difficult to make, symmetrical, smooth, and unchanged for around a million years—are the absolute earliest aesthetic artifacts in the archeological record. They regard handaxes as a product of sexual selection.

159–60 Kant disparages "finery" in section 14 of *The Critique of Judgment*, Kant (1987). Bell's weird remark about people of discernment not noticing representation in painting is in *Art* (1958), pp. 29–30.

162 Wittgenstein's comment about the human soul is in the *Philosophical Investigations* (1958), part 2, section iv. The Miller observation is in (2000), p. 356.

CHAPTER 8: INTENTION, FORGERY, DADA: THREE AESTHETIC PROBLEMS

165 Darwin's great two-volume work, *The Variation of Animals and Plants Under Domestication* (1896b) should, along with *The Expression of the Emotions in Man and Animals* (1896c), be much more widely known.

167–68 Wimsatt and Beardsley (1946), [w/s wimsatt beardsley intentional fallacy]; *The Possibility of Criticism*, Beardsley (1970), pp. 19–20. See Barthes (1977); Foucault (1969); Derrida (1983).

169–72 See Bunzel (1929); Stern (1980). A classic collection of bad verse is Wyndham-Lewis and Lee (2003). The Akenside quotation is in Beardsley (1970), p. 20.

176 See Nehamas (1981), p. 145; also Nehamas (1987).

177 Research discussed by Paul Bloom in *Descartes' Baby* shows that children aged three or four have a strong, spontaneous sense of the intention behind representations and communicative acts. Whether a circle with a straight line coming down from it is a lollipop or a balloon depends for the child not on resemblance but on represented intent. Bloom adds that "a good way to make a child cry is to take a picture [drawn by the child] that is described as 'Mommy' and insist that it is a picture of someone else—the child's brother, say. Children resent