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Another Darwinian Aesthetics (Last ms version).

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Despite the bright sun, dew was still dripping from the chrysanthemums in the garden. On the bamboo fences, and criss-cross hedges, I saw tatters of spiderwebs; and where the threads were broken the raindrops hung on them like strings of white pearls. I was greatly moved and delighted. …Later I described to people how beautiful it all was. What impressed me most was that they were not impressed. [**Sei Shonagon 1991:]**

…the most gorgeously coloured butterflies in the world. Fine specimens of the male are more than seven inches across the wings, which are velvety black and fiery orange, the latter colour replacing the green of the allied species. The beauty and brilliancy of this insect are indescribable, and none but a naturalist can understand the intense excitement I experienced when I at length captured it. On taking it out of my net and opening the glorious wings, my heart began to beat violently, the blood rushed to my head, and I felt much more like fainting than I have done when in apprehension of immediate death. I had a headache the rest of the day, so great was the excitement produced by what will appear to most people a very inadequate cause. Alfred Russel Wallace, [1877: II:51]

I.

Several themes important for the philosophy of art touched upon here: the *force* of aesthetic experience; the impulse to try to share it with others; anxiety or disappointment over the communicability of the experience and of course the beauty of nature in form and colour. In this talk I want to enter a plea for the still rather unpopular naturalistic approach to aesthetics in the case addressed to its evolutionary origins and significance.

In the 1870s, Darwin brooded on the 'taste for beauty' apparent across numerous taxa, wondered about its relationship to human artistry and proposed that beauty in living nature was related to sexual selection which he distinguished from natural selection. His position was contested by the co-discoverer of natural selection, Alfred Russel Wallace. Wallace, for the reasons discussed below thought this unlikely, maintaining that all living forms were either accidental or functional in promoting survival, and that beauty could only be an indicator of good health and fertility. Recently both Darwinian and Wallacean approaches have been revived in books by Miller [2000] Dutton [2009], and Davies [2012]. In this paper I want to investigate more deeply the Darwinian theory of selection for beauty, a topic they touch upon, but which is far less well understood by evolutionary biologists than they imply. I propose to explore the analogies between ornament in living nature, which serve as advertisement and is explicable on evolutionary grounds, and the human practices of making and presenting beautiful objects and the responses of liking and wanting them.

I have called my approach here 'another Darwinian aesthetics' to distinguish it from views that extrapolate too quickly from the case of the peacock's tail, a phenomenon that is in fact rather poorly understood. These include Dutton's view that artistic

productions are costly displays that attract according to the 'handicap' principle and Miller's view that artistry is a a male display feature that was selected for in the Environment of Early Adaptation. Instead I follow and develop the view of the ornithologists Nancy Burley (1998) and Richard Prum [2012, 2013] on biotic display and relate their schemes to human artistry

Before getting into the details and aware that there is much skepticism about any appeals to evolution or neuroscience in connection with asesthetics, I want to want to make some general comments on this approach

I. Philosophy of Art vs. Aesthetics

It is common to reproach evolutionary aesthetics with a failure to address the central questions of aesthetics.[i] 'Art,' says Alva Noe, 'isn't really a phenomenon at all, not in the sense that photosynthesis or eyesight are phenomena that stand in need of explanation. Art is, rather, a mode of investigation, a style of research, into what we are. ' 'The trouble with evolutionary theories of art,' he goes on to say, 'is that they tend to be empty. They don't tell us why we make art or why art is valuable for us…they don't even get so far as to say something substantial about art.' [*2015:* 59] 'Art offers revelation, transformation, organization' [ibid. 62]. It is not technology.

The view that art is, well, irreducibly artificial, not a biological phenomenon, goes back to Hegel. In his *Introductory Lectures on Aesthetics* of 1803, Hegel insisted on narrowing the field of Aesthetics for his purposes from the science of sensation and feeling in general, a Kantian usage, to the science –in the German sense, a rigorous, systematic enquiry aiming at knowledge---, of human artistic productions. Although he did not exclude the decorative arts from the category of objects of aesthetics, including 'the rude adornments of the savage' and 'the splendour of the temple with its untold wealth of decoration,' his focus was on European painting, sculpture, music and poetry and the beauty to be found therein.

What he did especially intend to exclude in the Lectures was the beauty of nature. In common life, he said, 'we are in the habit of speaking of a beautiful colour, a beautiful sky, a beautiful river, and moreover, of beautiful flowers, beautiful animals, and above all, of beautiful human beings.' Perhaps these things were beautiful, but, said Hegel, 'the beauty of art is higher than the beauty of nature.' This, he explained, is because it is the free production of a self-conscious intellectual being, a being with a mind, capable of perceiving the truth. The human imagination, the 'free activity of fancy' outstrips the form building powers of nature. It liberates, he said, 'the real import of the appearances from the semblance and deception of this bad and fleeting world, and imparts to phenomenal semblances a higher reality, born of mind.' Fine art, like religion and philosophy, is 'a mode of revealing to consciousness and bringing to utterance the Divine Nature' [2004: 3-9]

Hegel insisted that there had never been (implying that there never could be a science of natural beauty), that the science of nature was addressed to the useful; to the medicinal properties of plants and minerals. By contrast, although fine art was associated with deception, with appearance, and with entertainment and diversion from

the cares of life, seemingly rendering it unfit for scientific treatment the Lectures would dispel that superficial impression: the science of the aesthetic henceforth was addressed to fine art.

For all its praise of freedom and mentality, Hegel departed explicitly from Kant whose philosophy of beauty was addressed to the beautiful in nature and the decorative arts, in both cases, things whose 'sole purpose' seem to be to 'be beheld from the outside.' Consider, he said,

flowers, blossoms, even the shapes of entire plants, or consider the grace we see in the structure of various types of animals, which is unnecessary for their own use but is selected, as it were, for our taste. Consider above all the variety and harmonious combination of colours, so likeable and charming to our eyes (as in pheasants, [molluscs], insects, down to the commonest flowers): since these colours have to do merely with the surface and...have nothing to do with..[what] might be needed for these creatures' inner purposes—it seems their sole purpose is to be beheld from the outside.' (1987, V: 347-8).

The existence of these objects was profoundly puzzling to Kant because he could not bring himself to believe either that God or nature had in fact produced anything whose sole purpose was to be looked at from the outside. Kant's God was a moral idea of practical reason and the building forces of nature, being 'blind' could not construct objects according to a design, either for utility or for beauty. He goes round and round with this problem in the *Critique of Judgement* without really solving it.

The contemporary discipline of philosophy of art has followed Hegel's lead against Kant's. In Richard Wollheim's *Art and its Objects*, Hegel's differentiation becomes an accusation: that Kant's point of departure introduced confusion. Wollheim's agenda was the characterization of the 'aesthetic attitude' and while, like Kant's 'taste,' the aesthetic attitude was free of practical considerations of utility, Wollheim claimed that what he called 'uncontrived nature' could be regarded aesthetically only in a derived sense.

Wollheim was definite on this point: 'A serious distortion,' he says, ' is introduced into many accounts of the aesthetic attitude by taking as central to it cases which are really peripheral or secondary,' including Kant's rose or Edward Bullough's fog at sea. [1980: 96] He compared our taking such experiences as focal instances of the aesthetic attitude to 'an attempt to explicate our understanding of language by reference to the experiences we might have in listening to a parrot talking' [ibid. 97]. He admits that 'once the aesthetic attitude has been established on the basis of objects produced under the concept of art, we can then extend it beyond this base,' and he gives as an example Paul Valery's meditations on the sea shell [ii]and, at the turn of the previous century, 'the wholesale transfer of primitive artefacts from ethnographical collections …to museums of fine art, where, it was now thought, they were more appropriately located' [ibid. 98]. Where Hegel wanted to narrow the significance of a concept and so focus a field of enquiry, Wollheim begins from the narrowed and focused concept and field and admits to their contingent extension.

I. Darwin on Beauty and Display

Kant is not however so easily dismissed. His question, why does nature produce beautiful-to-us superficial characteristics along with useful-to-the-organism characteristics was a problem for anyone who did not believe in a great Designer, and especialy for anyone who believed that Nature should ruthlessly eliminate the frail, fancy, and delicate in favour of the mighty and robust.

Darwin had at least a passing acquaintance with 18th theories of the moral sense and the aesthetic sense and he was puzzled, as Kant had been, by the seemingly gratuitous beauty of natural forms. Natural selection favours efficient metabolisms, resilient internal organs, and strength, cunning and speed, and nowadays we would for some species at last, impulse inhibition, devoted childcare, learning from errors and avoidance of futility, but also curiosity and tenacity and all sorts of other survival-related bodily and mental traits.

Animals needed weapons and protective casings but what, Darwin wondered, explained the beautiful convolutions of the shells of molluscs, the branching and coiling of antlers? What explained the acrobatic dances of birds, their songs, and their brilliant feathering. These formations and performances not only raised the old problems of intentionality but seemed to use up a lot of energy, to limit mobility, and make animals conspicuous to predators.

The beauty of the bioworld to our eyes, he concluded, could not be accounted for on the assumption than living beings have evolved only under the selection pressures of avoiding predation, defending against or recovering from disease or illness, finding food and protecting and nourishing offspring.

The solution was to recognize that mere survival wasn't enough; the animal that could not acquire a mate would not pass on its traits to the next generation and being attractive to the other sex might compensate for weakness on the other parameters. Beauty in looks, sounds and behaviour was an object of selection by other sentient organisms.

Darwin believed that consciousness was found far down the phylogenetic scale, extending to planaria [1987 604**]** and he claimed to find precursors of the moral sense in group living animals; there was every reason to propose an aesthetic sense in animals as well. Noting that male birds tended to be more noisy, demonstrative and brightly coloured, he proposed that the females had shaped their appearance by responding to configurations they happened to like.

Males, he thought, competed not only in combat for mating opportunities with females, but also competed in looks. Females had an 'acute powers of observation and, and they seem to have some taste for the beautiful both in colour and sound…[they occasionally exhibit…from unknown cause, the strongest antipathies and preferences [2004: 473) Their fitness reduction where survival as concerned was compensated for by increased mating success. Thus natural selection and sexual selection were in competition **[2004]**.

Darwin's was mainly therefore a theory of female choice in mating, which has since been sustained across a variety of species including 'elephant seals, mice, fish, rats, gorillas, monkeys and birds.' Women in our species are normally successful in controlling the pacing and outcomes of courtship offered by males [Moore 1998]. Female control is usually said to follow from the greater parental investment and so cost of 'mistakes' born by females and the greater variance in many male traits leaving more for selection to work on.

What females choose, is not, it should be noted 'the best male' but the one they like the best, and Darwin noted that they could be highly competitive in going after that one. At the same time, different individuals, even in the same species, have different strategies for mate selection, ranging from accepting the first animal of the opposite sex encountered, to sampling and rejecting a large array before settling on one, sometimes for no apparent reason. For both males and females there will be inhibitions and defenses against mating as well as affordances and incentives. Pursuit and choosiness can be a waste of time or dangerous and costly [Jennions and Petrie 1997].

Darwin also thought that the male preference for feminine beauty had shaped the forms of the various 'races' with different facial features. There was no single standard of beauty, though presumably there were some commonalities. How else to explain why European and African facial features had diversified though not in ways predictable by climate and diet.

So Darwin fused his belief in the proto-aesthetic sense and aesthetic selection with the problems of ornament and the formation of 'races' and posed sexual selection on the basis of beauty along with other characteristics. Convinced as he was of the continuity of humans and other animals, he had a priori reasons for believing that aesthetic liking was an independent motive for certain animal behavior.

Since Darwin's time, sexual selection has been proposed as the driving force behind the colouration and diversity of the appearances of birds, reptiles, fish, insects, spiders, and molluscs. Animals do seem to be judging their prospective mates on the basis of their appearances and they often seem to like exaggeration, symmetry, and novelty. Female mannikins [birds] in which both sexes are drab preferred to mate in experimental situations with males adorned with red feather; though males preferred unadnorned females. Snails appear to evaluate other snails before mating by crawling over their shells and this has been proposed as the means by which the remarkable variety and elaboration of forms in these molluscs has arisen[Schilthuizen, 2003], hard to explain by selection for viability or fecundity, unless these variations really do succeed in confusing predators. Female tarantulas reject males who have lost one of their leg tufts.

Sometimes, however, they like averageness: a very deviant male might not be of the same species resulting in infertile offspring and wasted investment.[iii] And when a popular trait becomes fixed, there is little for female choice to work on. Enormous controversy has arisen over the supposedly exemplar case of the peacock's tail. After careful observation over 8 years, a group of Japanese researchers found little variance among peacock tails; and surmised that although male tail display was a part of mating behavior, female peahens were making their choices on some other basis.[iv]

Darwin's view that female birds possessed 'some taste for the beautiful' that had been a driving force in evolution was contested by Wallace, the co-discoverer of natural selection. Wallace approved of Darwin's scientific approach to natural beauty. 'The bright and often gorgeous coloration of insect, bird, or flower, was either looked upon as having been created for the enjoyment of mankind,' he commented, 'or as due to unknown and perhaps undiscoverable laws of nature. … Darwin …showed, clearly, that some of the colours of animals are useful, some hurtful to them; and he believed that many of the most brilliant colours were developed by sexual choice [Wallace 1889: 187]

Wallace described the importance of colour in camouflage, mimicry, luring prey, and permitting the recognition of conspecifics. He agreed that 'There seems to be a constant tendency in the male of most animals— but especially of birds and insects— to develop more and more intensity of colour, often culminating in brilliant metallic blues or greens or the most splendid iridescent hues..' [ibid. 273].

But for all his own aesthetic sensitivity, and dismissal of teleology, Wallace held to the view that the shapes and colours *we* admire in birds and other animals was just an incidental effect of physical and chemical processes that produced colour and pattern everywhere in the mineral, vegetable and animal kingdoms. He rejected the notion that female choice of aesthetic qualities could really influence the size of a lineage when the other forces of natural selection in insects and birds were as rigorous as they were.

Colour, he argued, is selected against in females, not for in males: the female is more vulnerable. 'Natural selection is constantly at work, preventing the female from acquiring these same tints, or modifying her colours in various directions to secure protection by assimilating her to her surroundings, or by producing mimicry of some protected form' [ibid.] In species, he noted, that are protected by their nasty tastes this drabness is not selected for. In some birds, including kingfishers, the woodpeckers, the toucans, the parrots, the turacos, the females are as brilliantly coloured and conspicuous as the males, which Wallace explains as their building nests that completely conceal the incubating bird

Wallace recognized that male birds display their plumage to best advantage and perform stunts [ibid. 288] and, he agreed, ' it may also be admitted, as highly probable, that the female is pleased or excited by the display' [ibid. 285] But, he said, 'it by no means follows that slight differences in the shape, pattern, or colours of the ornamental plumes are what lead a female to give the preference to one male over another; still less that all the females of a species, or the great majority of them, over a wide area of country, and for many successive generations, prefer exactly the same modification of the colour or ornament' [ibid., 285]

He offered the analogy of a suitor who,' when courting, brushes or curls his hair, and has his moustache, beard, or whiskers in perfect order,' This pleases his girlfriend, but she does not chose him on that basis [ibid. 286].

Further, he said, 'we cannot conclude from this that the whole series of male costumes, from the brilliantly coloured, puffed, and slashed doublet and hose of the Elizabethan period, through the gorgeous coats, long waistcoats, and pigtails of the early Georgian

era, down to the funereal dress-suit of the present day, are the direct result of female preference' [ibid.]

Wallace's arguments, beside his firm conviction that natural selection was too harsh and rigorous a process to allow the frivolity of aesthetic preference] to have any significant role in influencing the direction of evolution [ibid. 295] were reasonable. They represented a selection of Darwin's own observations and included the following:

1) Displays often occur after the pair has bonded, so they cannot function as selection criteria.
2) Females (in the henyard anyway) preferred "the most vigorous, defiant, and mettlesome male," not the prettiest [ibid. 286].
3) The 'surplus of strength, vitality, and growth-power' in males was sufficient explanation of their ornaments, and of the seeming correlation between ornament and preferences [ibid. 293].
4) The female's perceptual apparatus is not sharp enough to 'cause her to choose her mate on account of minute differences in their forms, colours, or patterns' [ibid. 294].
5) Acting on aesthetic preferences implies making a voluntary choice beyond being stimulated and excited and this is beyond the capacity of the animal mind. 'We have, thus, no reason for imputing to her any of those aesthetic emotions which are excited in us, by the beauty of form, colour, and pattern of these plumes [ibid. 294] [v]
6) Partner choice often appears to be arbitrary or to select seemingly unattractive individuals. Wallace had been assured that moths choose their mates pretty much at random and he cited Darwin's anecdote of some peahens who had a strong liking for an 'old pied peacock' [ibid. 285].

Unlike some of his contemporaries, Wallace did not deny that females exercised choice and certainly not because of any supposed Victorian notion of natural female passivity. As an opponent of eugenics, he advocated more female empowerment, more free choice for women unconstrained by economic and social needs. But those choices would be directed to worthy qualities not prettiness. Unlike Darwin, who was probably a materialist, Wallace believed that there had been a second act of creation…, "a giving to man, when he had emerged from his ape-like ancestry, of a spirit or a soul. Nothing in evolution can account for the soul of man. The difference between man and the other animals is unbridgeable."[vi]

The current mainstream view with regard to attractiveness is that of Wallace and it goes under the headings of honest signalling and handicap theory [Zahavi 1975; Hamilton and Zuk 1982]. The idea is that the healthiest, most robust organisms, unmenaced by too many life-draining parasites can produce elaborate and highly symmetrical, hence beautiful, structures and dances. An animal that does so advertises its underlying vigor and its ability to have survived the encumbrances of fancy tails or heavy antlers. The male on the honest signaling/handicap view is indicating that he is a healthy bird with surplus resources to spend time collecting material for the bower and arranging it, rather than needing for example to eat or escape predators. The females are selecting 'good [nonaesthetic] genes.'

By contrast, Darwin's view was that a trait could be preserved or enhanced simply because prospective mates had a taste for it. The male trait did not need to signal anything except 'Look at me!...I am available' The female preference for it did not need to indicate 'I see you have a good metabolism and have escaped predators so far' but only 'Nice!...OK.' The benefit to the female of choosing the beautiful male was: a) her mate search was terminated and she could stop dilly-dallying and get on with reproduction and b) her male offspring might inherit the trait and be attractive to other females. The search for food and a mate requires 'stop' signals, lest we go on interminably looking for something better. Ronald Fisher confirmed Darwin's supposition that a trait with no positive correlation to male viability and indicating no benefit to the female or her offspring except their father's attractive looks could become exaggerated and widespread (1930, 137).

V.

The modern advocate of he minority, Darwinian view is the ornithologist Richard Prum,. Prum believes not only that sexual selection based on pure preference accounts for the beauty and diversity of birds, insects, snakes, and reptiles. Their nonhuman 'artworlds' are composed of participants in the process of 'aesthetic expression, evaluation, judgement and change.' (2012: 813) 'Every time you find co-evolution between advertisement or expression and evaluation, then I propose that you have art. And that means that flowers are art, most of them; and that birdsong is art; and lots of aspects of bird plumage are art. And crickets chirping."

Darwin's view, Prum argues, should be considered the 'null hypothesis'. We cannot prove that females who seem to be making pure aesthetic choices are not responding to indicators of nonaesthetic 'good genes.' But why assume this as a methodological principle? We have ample evidence, he observes, that animals' sensory organs prefer and are attracted to as well as being repulsed by and disliking the visual appearances, tastes, and smells and sounds of other animals of their own and other species, plants, and fungi. There are forms whose origin and continuing existence depends on the fact that they can provoke a rewarding visual, tactile, odorific, or other sensory response in another organism, encouraging interaction with it, on account of the effects on its nervous system have that significance. [vii] They belong to a 'marketplace of animal sensory experiences and choices' in which animals can 'evaluate, differentiate, and remember.' (2012:816)

Light and matter, as Wallace insisted, without the guidance of any intelligent agent but under the forces of physics and chemistry and poorly understood mechanisms can produce striking colour effects and symmetrical and interesting shapes. Many beautiful forms have no evolutionary significance including snowflakes, sunsets, waterfalls, the shapes of crystals, diatoms, and viruses. But beautiful forms arising in plants and animals that need to be noticed and chosen by other organisms belong to a form a subset of those of beautiful nature. Dragonflies evolved by degrees to look the way they do because of the effect their appearance had on members of their own or other species whereas geode crystals, snowflakes, and fern fronds did not.

We can think of plants as well as nonhuman animals as 'attempting' to exploit the sensory systems and behavioural responses of other animals, and as 'experimenting' by unconsciously, unintentionally evolving appearances such as the various shapes and colours of flowers which are trying to lure pollinating insects or stripes or shadings which are trying to hide an animal from parasites or prey or predators appeal or he warning coloration of certain snakes or toadstools or the skunk.

The sensory, emotional, and behavioural systems of animals are experimenting as well. They try out sensory presentations of a world to discover which works best, which tastes and preferences and responses to the presented world are keeping it –that is to say its lineage alive. As Prum points out, flowers do not converge on a single 'optimal' form and odour that 'elicits the apian foraging response with the greatest efficiency.' By contrast, roots do not partake of biotic display. They are simply optimised for collection and transport of water in ambient soils and do not show the same variation (2012: 815-6).

So the biotic world is composed of signallers who try out new displays, some of which flop, and also passing successful display habits and morphology along to their descendants. It also composed of evaluators, who try out new evaluations and reactions, but also pass down those that worked for them to their successors.

There is co-ordination: the bee gets nectar, the flower gets pollinated, the dragonfly gets a mate, the snake is unmolested and the rat doesn't succumb to venom. But also victimization by the exploitation of sensory systems: the fly gets eaten by the flytrap and the gazelle doesn't see the tiger in the tall grass.

If co-ordination has been achieved, as it must have been for a species to be there at all, why do tastes and appearancea change? Innovation in appearance traits we can suppose is accidental and usually harmful like most mutations. But evolving a new display trait might provoke a favourable reaction by happening to push another animal's buttons. Evolving a new taste can get you a mate that all your competitors have fortunately overlooked or just get you to settle down and make some choice or other. [viii]

Fine art in the human world, according to Prum, involves the same pattern of invent tion, expression, evaluation, judgement, and change. And the aesthetic goodness of good art objects is a feature of co-ordinated inventions and preferences that are under human control and reflect cultural forces such as education.

What then *is* beauty? It is the imputed quality of an object that makes you want to, as Plato implies in the *Symposium*, to *gaze* on it: to listen to it, watch it, sniff it, run your hands over it, to the natural point of satiation; the transmitters are depleted, we are bored or conscious of duty awaiting. In the case of a pretty pebble this can of course happen pretty fast. We want to be 'near' the sources of these experiences, sometimes to be their producers or to copy them, and where possible to secure the objects to have access to this pleasurable stimulation, anticipating that they will be a joy forever. Beauty I suggested earlier is what makes us halt: Beauty floors you: you stand there rooted to the spot. 'I never wanted it to end' people say. 'I couldn't take my eyes off him' 'I could have gone on looking at that picture forever.'

But why do *we* like the peacock's tail or the rose or the mollusc's shell when its advertisement is not directed at us? Why the near universal human liking, Kant's point of departure, for feathers, shells, flowers, sunsets, gemstones, fireworks etc. ? Our nervous systems must have enough in common with those of birds, bees, and perhaps even snails that certain formations, such as symmetrical or fractal structures, are both easy for nature to make and easy for animals, whose nervous systems are equally constructed by nature, to like. Dutton denies that these objects work on our nervous systems as a recreational drug painting is not 'a pill that alters brain chemistry and gives us 'beautiful landscape feelings.' [ix] But why not? Hallucinogenic drugs and other altered states of consciousness as Aldous Huxley argued give us powerful experiences of beauty simply by releasing and inhibiting neurotransmitters (Wilson 2015).

It may be objected, in a Hegelian spirit, that art involves ideas and links us to history and the human life cycle and practices and emotions in such a sophisticated and even transformative way that all conceptual connection with natural beauty gives way to thi special kind of 'aesthetic significance.' Connoisseurship in the human artworld can enthusiastically attach to things like the Venus of Willendorf or the paintings of Francis Bacon whose aesthetic significance is remote from that of birds and flowers I will return to this question after evaluating the other Darwinian theory, that of Miller and Dutton.

I. Miller and Dutton

Darwin supposed that apes might be impressed by as he put it 'the beauty of the coloured skin and fur of their partners in marriage.' (Darwin 2004: 150) The facial features of some apes and monkeys are believed to have been shaped by female choice. However, where our closest primate relatives are concerned, ornamentation does not seem to have been pushed to extremes. Individuals are evaluated and selected as mates for their status, their age familiarity, and their novelty, but there is no evidence that their beauty is noticed and responded to. Where we might take human morality to be an embellished, developed, corrected form of primate protomoral behaviour, the proposal here is not to take human aesthetic behaviour as an embellished, developed, corrected from of primate protoaesthetic behaviour. Dutton, for his part, regarded the 'art instinct' as uniquely human. Art, he insisted is a human production, 'Animals construct stunning objects and put on spectacular performances.' [2009: 99] Nevertheless, they 'do not create art.' Art he maintains requires intention and control over a formative process and an ongoing interest in the products. When animals are interested in the products as in plumage, it was not created intentionally and when it is created intentionally, like the paintings of chimpanzees and elephants, he observes, they are not interested in the products.

Furless humans, however, with their compared to other mammals broad chests and frontal postures, do create displays with face-painting, nail polish, tattoos, jewelry, and clothing and it is difficult not to see this as bird like behavior intended to attract as well as to serve perhaps other functions. Darwin wrote to Wallace *a propos* of his book on the Malay Archipelago in March,1869

'In Vol. II., p. 255, you speak of male savages ornamenting themselves more than the women, of which I have heard before; now, have you any notion whether they do this to please themselves, or to excite the admiration of their fellow-men, or to please the women, or, as is perhaps probable, from all three motives? **[Marchant ed. 1916** [x]

Unfortunately this letter was not answered or the reply has been lost. Geoffrey Miller's book *The Mating Mind* proposed an answer: Artistic production, he maintained, is a form of male behavior that was selected for by females in the Environment of Early Adaptation.

This is not an absurd suggestion. In 1985, Richard Dawkins introduced the term 'extended phenotype' to include animal behaviours and productions that are heritable with variation and so involve a genetic component (which may be prompted by observation and learning). This allows us to consider as part of our 'animal' not just its body, but the structures it builds such as nests, burrows, and dams, its behavioural dispositions and habits, its vocalisations. The nest of the bowerbird on this view is as much a part of the animal as the shell of the snail, emanating from its mantle. The concept of the extended phenotype opens the door to treating human artifacts, not only species specific tools and weapons which can be seen as versions of claw, horns, teeth, and beaks, as parts of the humans who use them, but other species-specific objects that it uses for survival or to attract mates, or to raise its young.

But how did this alleged selection process work and what is the evidence cited for it?

Miller agrees with the majority of students of human evolution that the human brain – roughly 3 x the size of the chimpanzee brain--could not have evolved for foraging, hunting, predator avoidance, and infant care; for other primates accomplish these tasks with their smaller ones. Rather, he proposed, the brain evolved to display an ornament--the mind. The human mind's most impressive abilities—linguistic ability, wit, insightfulness, and artistic competence, he argued, are "courtship tools, evolved to attract and entertain sexual partners" (2000: 4). [xi]

Mentality, for Miller, evolved as a male display-feature, analogous to the peacock's tail, with witty, mathematical and artistic men preferred as mates. Because of genetic correlation between the sexes women's brains got to be almost as big and their general intelligence just as great and their aesthetic aptitude. Yet men employ their artistic powers to a greater extent in competition.

'Sexual selection theory,' says Miller,

> would predict sexual dimorphism in the public behavioral manifestations of intelligence, because the reproductive benefits of such displays would always be higher for males than for females given some degree of polygyny [i.e. male promiscuity]. . . Demographic data on the production of costly, difficult, public displays of intelligence such as painting pictures, writing novels, producing jazz albums, and publishing philosophical speculations (!) reveals a very strong dimorphism, with males producing about ten times more displays than females, and male display rates peaking in early sexual maturity (ibid. 82-3) .

For Miller, this is true 'Fisherian' selection: a matter of pure liking that rapidly exaggerates the trait-collection of 'creative intelligence' including artistic competence and performance.

Denis Dutton follows this approach, in the *Art Instinct* but he adds some Wallacean elements to Miller's more authentically Darwinian approach. Dutton takes beauty to be an indicator of health and 'high quality genes' (2009: 137, 156) and he believes the same of language use: that it is an honest signal of intelligence and capability contributing to viability. (ibid: 152). He assumes that sexual selection 'typically involves aggressive fighting among males for females in a winner take all situation' (ibid: 139). He cites many examples of human males displaying ornaments to females or bringing them pretty gifts. And he introduces handicap theory to argue that artistic objects achieve their effects in virtue of being 'the most opulent, extravagant, glittering, and profligate creations of the human mind,' They squander brain power, physical effort, time and resources.' (ibid: 136)

In evaluating this view we should take the stance that it could be right. Despite all the unclarity surround both female choice and the mechanisms of evolution, it is generally agreed that the colours and forms of plants and animals are shaped by biotic display, and it is generally agreed that a soul did not descend of human beings from a supernatural source and so that perceptions, dispositions, and behavior have been shaped by the same evolutionary forces that shape physiology and anatomy.

The appeal of the Miller-Dutton theory is that it regards not only the human body as a target of preference and selection, but also the mind. It links human self-decoration and hairdressing to animal plumage and grooming, and the impulse to build and adorn to such exercises as nest and bower building. Further, it explains why despite being past prime reproductive age, alcoholic, unhealthy, and mean, high-achieving novelists, poets, and musicians subject to addictions, malnutrition, vehicular accidents, and so on.
can attract young, beautiful intelligent women: Either the handicap principle is kicking in indicating those 'good genes,' or maybe women's aesthetic preference trumps all indicators of poor paternal interest and competence.

However, in trying to estimate the likelihood of this account, we need not just to consider what phenomena it could explain, but what phenomena it explains better than competitor theories and what would have to be the case for the process to work.

By way of doing so it is important to distinguish between two claims:

A)Artistic competence and a disposition to exercise it was a trait that was gradually strengthened in human by a process of selection in which females preferred more artistic males to less –either because as Dutton claims, they saw artistic production as revealing a surplus of the qualities they needed to reproduce or because they benefited by giving birth to sons with the attractive trait—artistic competence and performance--women happened to like.

B) Human males use their somehow evolved large, metabolically expensive brains and dexterous hands and their artistic tastes to exercise a new form of competence to try to

attract mates. Sometimes their efforts pay off with reproductive success that would not have been achieved otherwise.

B) is obviously true: people use their collections of etchings, also fashion, make-up, and swapped youtube videos, and express their liking for museums and restaurants, in a manner intended to impress and seduce others. Sometimes it works, other times it does not. But the phenomena could be explained by the existence of a taste for beauty and a competence in manufacturing and decorating that are accidental effects 'spandrels' of good eyesight and fine eye-hand co-ordination and a large brain along with cultural developments innovations that allowed for leisure time.

An intermediate hypothesis would be C) the large brain and other preconditions evolved through sexual selection of males by females but it was not the case that some animals left more descendants than others because their artistic competencies awarded them extra mating opportunities. And there could well be other versions of the hypothesis D and E according to which females are the main producers and males the consumers or in which both sexes engage in selection.

Dutton seems to be clearly committed to A) with talk of an 'art instinct' whereas Miller could be interpreted in accord with A) or C). Since A) is the more provocative hypothesis, I will concentrate on it. So what would have to be the case for A) to be true?

First, it would have to be the case that artistic abilities and the propensity to display them were heritable from parent to child. In the case of peacock plumage, both males and females possess the genes for fancy tails, but their expression is dampened in the female by estrogen, so the same might be true in a Miller scenario.

This could be tested and has been. However, tests of 'creativity' or 'creative intelligence' involving things like thinking up lots of uses for a brick seem to me completely irrelevant. We should be concentrating on the abilities need to fashion a shapely pot or decorate a tool or implant a tattoo or braid a friend's hair, or to carry a tune or dance in a sinuous and yet elegant, as opposed to a clumsy fashion. Perfectionism, attention to detail as well as good motor control are essential, but importantly so is taste. In the biotic world the producers and evaluators are different, but in the world of human artistry the artist must evaluate as they go along. Thus sticking to the A hypothesis, females would have to pass their ability to distinguish good art from bad along to their future-artist sons as well as their future-evaluator daughters.

If the daughters have taste and have the same perfectionism, attention to detail and good motor control as their brothers, they will be producing art as well. Everybody will produce and evaluate art in the Environment of Early Adaptation. This scenario is empirically plausible. It is consistent with A: maybe the females are making their own art but they still prefer as mates the artier males leading to runaway selection.

Another condition that would have to obtain is that artier males with their genes for art are given or can attract more females as mates than less arty ones. One problem with the hypothesis is that humans do not choose their mates as birds, lizards, fish, and spiders do. Rather, arranged 'monogamous' marriage with exchange of women between groups appears to date back at least 50,000 years [Walker et al. 2011] where it

presumably was based on criteria of kinship, alliance building and status. Perhaps the arrangers were impressed by artistic abilities, or the principals, but the Wallacean impulse to say that such frivolous criteria would not have been likely to be employed is strong her.

To be sure somewhere between 1-50% of offspring, depending on social policing and the internalization of norms, are the products of adulterous relationships and these might be supposed to occur on the basis of spontaneous likings unaffected by social concerns. But we can readily suppose that these 'pure likings' attached to limbs and faces, gait, diction, and manners, personality and character. That adulterous unions were made more likely by the possession of artistic talent and likings for the other person's decorations and dances, not to mention the quality of their manufactured artifacts, is possible but again hardly obvious.

So, we can't rule out scenario A) However, the only reason the hypothesis seems to suggest itself as better than hypothesis B) or C) or D) or E) is the greater professional involvement of men vs. women since art began to command income, and the popularity of artists in our modern world. This is not high quality evidence for an evolutionary process beginning in the late Pleistocene. Miller's observation that male display rates in the fine arts are greater than female display rates and coincide with the peak reproductive years tells us something about educational institutions and the division of labour, but hardly supports inferences to the EEA [xii] Aesthetic practices get allocated. In hunter-gather, and nomadic societies in which artistry consists in the manufacture of garments, rugs and wraps, body art, the decoration of pots and weapons, there is no evidence of male domination across cultures.

Women in civilization, in a condition of economic dependency in which status and titles are important may actually use aesthetic competence and performance nonprofessionally and far more broadly than men, as attractants for a scarce resource. Young Victorian women learned drawing, embroidery, piano, and other accomplishments. Much 'traditional' female aesthetic activity, such as picking out birthday cards, or decorating the home, or making cakes looks like 'mating mind' activity intended to attract suitors or to maintain relationships, so Miller might just as well have run his argument the other way. Where handicap theory is concerned, female aestheticism in the choice of novelties in clothing, accessories, perfumes, hairdos and so on is extremely costly and time-consuming as well.

IV

The evolutionary theories of Dutton and Miller focus on the production of art, not the liking for it. But this is backwards. Logically the taste for beauty must precede the appearance of beauty, which then exploits it. And in the human case taste—the ability to judge and correct one's own efforts—must arise simultaneously with manufacture and performance because artistry unlike plumage and colouration is under voluntary control. Beauty is not beauty if it does not trigger the liking and wanting response.

The favoured explanation for the 'taste for beauty' at present is 'sensory bias' which implies that 'the sensory system of any species will be pre-adapted to perceive some not yet evolved stimulus in a particular way.' (Burley 1985, p. 31) 'Aesthetic preferences,

then, are emergent properties of the central nervous system and sensory systems that orginated incidentally, because they were inherited and not extinguished or because they make a contribution to searching food or building nests or doing other survival and reproduction related tasks, rather than not through active selection on mate preferences'(Burley and Szymanski, 793). Thus animals contain these reservoirs of latent preferences that become operational only when some innovation happens along to exploit them.

This explanation illuminates Kant's notion that the aesthetic attitude is 'disinterested' [Kant] Kant distinguished between the good form of a horse or palace or woman – objects he thought of as being 'good for' something –unlike the rose or the seashell. This insistence—and the theory of the special aesthetic attitude-- is consistent with the sensory bias theory. In aesthetic experience, cerebral mechanisms are accidentally triggered by sensory presentations having in many cases nothing to do with survival and reproduction., yet triggering the liking and wanting responses. What we want from the beautiful object is to *experience* it where 'experiencing' can be distinguished to some extent from using. [xiii]

Recognising that aesthetic taste precedes production, we can account for the cultural phenomena Miller and Dutton describe without introducing gratuitous hypothesis A. Tastes were latently there and human beings, with all their ingenuity and dexterity, then discovered how to tap into them for personal gratification and social rewards. Chance inventions: the cooking of food, metal technology, horticvulture and agriculture, omnivorousness, left these big brained, dexterous people with plenty of time on their hands. Once they had acquired certain technologies and leisure, humans moved on from decorating themselves to decorating pots, weaving patterns, featherwork, metal jewelry, later architecture, tiling, wall painting. Socalled primitive art replicates the building forces of nature in its vegetable and geometrical forms and where pigments are available bright colouration.

These patterns and colours create arousal, attention, absorption, and pleasure because they are fitted to the human nervous system which makes use of an underlying geometry for the interpretation of the visible world.'Artist' became a special occupational category in ancient urban civilisations, and experimentation and cultural exchange resulted in people happening on new ways to make things and discovering by trial and error how to unlock in human minds arousal, interest, aesthetic shivers, feelings of being taken into the work and transcendence, a loss of the normal sense of self, that characterise the experience of fine art.

If metals had higher melting points than they do; if animals had proved impossible to domesticate, there would not be wealth and poverty, slavery, money and means of transport other than walking. There would be no fine art. But there probably would have been and would still be clothing, jewelry, mutilation, and face and body painting, and hairdressing as biotic advertisement expressing group membership, clan identity, as well as mate eligibility. There is a universal human insistence on doing something considered artistic or aesthetically preferable—making it special—as Ellen Dissannayke [Dissanayeke 1995: 39-63) says-- with hair, face, and body: tattooing, scarification, jewelry, hairdressing and headgear, genital cutting, to the point of what we consider mutilation. It would be interesting to know whether a group of children abandoned on a

desert island but provided with the means of survival would discover the arts of personal adornment and develop the same liking for flowers, birds and shells that Kant thought entirely spontaneous and untutored. In some cases, decoration seems to be learned from the birds. Andrew Strathern reports that members of the Melpa tribe of Papua New Guinea contrive their costumes, dances an songs to imitate the bird of paradise (2013: 304-5).

The concept of the extended phenotype, so illuminating in some respects, can lead us into silliness. Are skyscrapers and theatre tickets are elements of the human extended phenotype providing protection from the sometimes lethal elements and helping to induce mating behaviour? If the underlying capabilities and interests that lead people to make and use these things were not heritable, one might argue, they would not appear in successive generations. They are optional, comes the reply: our species has done and can do without, but then under some conditions animals can do without their customary nests, burrows, and dams too. I see no way of drawing a sharp line around the extended phenotype but for the arguments of Miller and Dutton about sexual selection to work, artistic productions of human beings will need to be more like feathers and less like theatre tickets, and I have argued that they are not. .

III.

The question remains: how should we regard the 'institutional' human artworld with its professional artists, competitions, fees, and prizes, and devoted connoisseurs and collectors as related to the phenomenon of biotic display and evaluation? Prum's artworlds are inhabited by birds, lizards, fish, butterflies and insects, not our nearest nonhuman ancestors. Our nearest primate relatives—the chimpanzees-- do not appear to engage in sexual selection for ornament. So it seems impossible to argue that there is some kind of evolution towards conscious control over producing beauty –perhaps with bowerbirds in the middle-- in evolutionary history that puts us on a continuum with birds. [xiv]

Outside of fine art, a very recent innovation in human history, but, as I mentioned, the one that has given rise to the special discipline of Hegelian aesthetics, most human artistry was both beautiful and functional. Display could and still can signal class, rank (hence the existence of sumptuary laws) religious identification (turbans), invulnerability (armour) danger (swords, wedding rings) priestliness or occupation, (uniforms), rings or bound hair or shaved heads (marital status), or mark ceremonial holidays as Christmas sweaters or black tie dinners, or just attitudes to life, like Goth makeup or motorcycle-gear. Such display is evaluated for appropriateness, and sometimes-often—for beauty or charm. Only when but whenever adornment and decoration is meant to arouse, please, and attract, and when there is a possibility that it does not do so because of the tastes of the observer, is it aesthetic.

Aesthetic assessors come to human manufactured works affected by their internal wiring, by biases, sensory acuity and emotional dispositions, previous experience and cultural learning,

As in nonhuman aesthetic progress, which can be rapid as forms and preferences in a population shift [ ], there is coevolution of observers' appreciation and producers innovations: the taste of critics and purchasers encourages certain forms and certain innovative forms succeed in getting themselves liked, so that preferences sprwad through the population. [Prum]

A connoisseur class develops that proposes authoritative judgements on the relative value of fine art objects. Their judgement is 'better' than that of the naïve observer because it is based on a wider class of comparisons, harsher scrutiny, and is supported by articulatable 'reasons.' The notion that beauty is an objective feature of some objects arises from the conflation or commingling of two valid observations: first that there is virtually universal liking for some forms of biotic display and light and colour effects, and second that there can be a great deal of convergence in certain connoisseur classes.

In closing, I return briefly to the Hegelian objection that 'aesthetic significance' dependent on ideas not 'beauty' is relevant to the appreciation of art vs. the appreciation of nature and that objects that are 'ugly' can be highly significant—my examples were the Venus of Willendorf and most paintings by Francis Bacon.

No one will doubt dispute that these objects are a) produced for evaluation; the fabricator of the first was trying to make it come out some way, and the fabricator of the second was making something for exhibition an sale. Also, they are arresting, and they are so because they are novel objects for us that (along with dramatic tragedies) tap into emotional and cognitive systems designed for real life, including disgust and fear, as those little white feathered caps apparently tapped into the finches' sensory systems. Human made art is experienced as 'transformative' especially when there is some element of horror and fear involved because we are transfixed and have the impression that there is something to be learned from these new appearances, which the critic's account of them may or may not be able to explain.

Although I took strenuous issue with Wollheim's claim that beauty in nature and the explanation of beauty in nature is derivative rather than the ground of all aesthetic appreciation, evaluation, and explanation, there is something right about it that emerges in the contrast between Sei Shonagon's description of her experience and Alfred Russel Wallace's description of his.

The Lady Shonagon belonged to a court culture that with an abundance of leisure and no real work paid meticulous attention to costumes, poetic and epistolary expression, the exchange of gifts and paintings. The phenomenon she describes of a spiderweb hung with drops of dew is probably not an example of biotic display, though the chrysanthemums are.

I assert that with some hesitation because for all we know the symmetry of spiderwebs exerts an attraction *via* its effect on the brain of the fly that is lured by the exciting appearance of the web rather than simply happening to fly into it. But in Shonagon's word portrait, the spiderwebs are tattered, the flowers are dripping, the scene itself has a certain elegiac mood and could not qualify as a display that could have been an object of selection. Further, in the absence of considerable practice in adorning, arranging and judging, the scene would not have been noticed or evaluated by a human being.

Wallace, although he is responding to a biotic display that was shaped by evolutionary forces, in other contexts, having to do with the appreciation of landscape, often seems to be drawing on his experiences with fine art in responding to nature. In his description of the Malay Archipelago he evinces his familiarity with travelogues and illustrations and refers to scenes frequently as 'picturesque.' .[xv] Even here the term 'velvet' (other writers on insect coloration are apt to reach for terms like 'jewel-like' imports a term from the 'higher' arts.

The experiences and resulting descriptions of beautiful nature in the quoted passages are then influenced by existing background practice in cultural traditions of making, noticing, and describing and are unthinkable in the absence of such traditions. But it was never my intention to question that. My aim was simply to understand fine art as an especially deliberate and conscious form of display implying a co-ordination between the producer and the evaluator –who in the human case are collapsed into the same organism, that in a wide variety of contexts in the bioworld operates unconsciously but effectively.

. The sexual swellings of female chimpanzees advertise fertility periodically but it is not clear that they are objects of assessment [xvi]

[ii] Thus Stephen Davies criticizes Ellen Dissanayke Dissanayake ditches the greater part of art's artiness and intellectual value. And she becomes vulnerable to the charge she makes against other anthropologists and evolutionary psychologists: that they deal with . . . precursors or ingredients of art and the aesthetic rather than with the developed behaviour. (131-132)

Valery

[ii]

[iii] Though Darwin cited several instances of 'tamed or domestic birds, belonoing to distinct species, which have become absolutely fascinated with each other' and gone on to breed (2004: 466)

[iv] [Takahashi et al. 2007:1209] ' Combined with previous results, our findings indicate that the peacock's train (1) is not the universal target of female choice, (2) shows small variance among males across populations and (3) based on current physiological knowledge, does not appear to reliably reflect the male condition.'

[v] Darwin wrote in a letter of August 31 1877 to Wallace on his chapter 'By the way, I doubt whether the term voluntary in relation to sexual selection ought to be employed: when a man is fascinated by a pretty girl it can hardly be called voluntary, and I suppose that female animals are charmed or excited in nearly the same manner by the gaudy males' [Marchant, ed. 1916 I:299]

[vi] This was stated in an article written for the *World Magazine* ; it is quoted from the (indignant) editorial in the *Humanitarian Review* Los Angeles CA August 1910.

[vii] As Prum notes, the 'aesthetics of nature' typically does not distinguish between the abiotic beauties such as that of a starry night, or certain land forms and biotic nbeauity. (2012:814-5)of

[viii] It is clear that in human societies people are both choosy and needy, in varying proportions and in ways addressed to different aspects of their lives, and this is the case with other animals as well: mating involves costs and risks, but is necessary.

[ix] AI 101. He is criticising Steven Pinker p. 101..

[x] Down, Bromley, Kent, S.E. March 22, 1869.

[xi] Where 1) and 2) are concerned, there are alternatives that are more widely accepted on which large brains with certain perceptual biases were selected for with artistic, mathematical and other competencies emerging as by products of cerebral size and organization. One such proposal is the Cosmides and Tooby view that "The mind is a neural computer, fitted by natural selection with combinational algorithms for causal and probabilistic reasoning about plants, animals, objects and people." Another is Kristen Hawkes' grandmother ' hypothesis, [xi]according to which there was selection for post-fertility longevity and co-operative breeding, and this required large brains that could outlast dietary neurotoxins, degenerative diseases and accidents. [xi]

[xii] In peacocks, one might add, the potential for a fancy tail is possessed by both males and females, but under hormonal control. If Miller were correct, it ought to be possible to suppress male aesthetic display by giving them birth control pills.

[xiii] Some writers trace our aesthetic liking to survival related concerns: we like pictures of lakes, open landscapes, beautiful women and men, ripe fruit, and the analysis of the sublime introduces survival related concerns –'bold overhanging rocks, storms at sea, battles, and so on. [Kant] Thje artists exploits our fear of such 'real things' to give us an aesthetic experience in a condition of safety or a condition of permanence and accessibility when these thigns are lacking in real life.

[xiv] What has not been explained is why dimorphism with male ornament is common in birds, insects, lizards, and fish but less common in mammals. The suggestion that this must have to do with the XY system of mammalian sex determination vs. the ZZ system of birds and butterflies and lizards is intriguing but there are conflicting data.

[xv] vThis was my first view of an active volcano, but pictures and panoramas have so impressed such things on one's mind, that when we at length behold them they seem nothing extraordinary.

[xvi] The evolution of exaggerated sexual swellings in primates and the graded-signal hypothesis CHARLES L. NUNN ANIMAL BEHAVIOUR, 1999, 58, 229–246