

II. The Broad Reach of Evolutionary Aesthetics

ELLEN DISSANAYAKE

DENIS DUTTON: APPRECIATION OF THE MAN AND DISCUSSION OF THE WORK

Abstract. Despite being a trove of lively observations and stimulating ideas, *The Art Instinct* does not succeed in its stated purpose of showing that art has been evolutionarily adaptive. The book is more about aesthetic *experience or response* (pleasure and beauty) than art *making or participation*, and the author's twelve "cluster criteria" are too general for understanding why a particular behavior (or behavioral predisposition) of art might have originated and evolved. Advocacy of the sexual-selection argument is inadequate: participation in the arts is good for everyone, not just a few (male) virtuosos.

MY ASSOCIATION WITH DENIS Dutton began almost exactly thirty years ago, at the 1981 American Society for Aesthetics (ASA) conference in Tampa, although in an inverse sort of way: he deliberately chose not to meet me.

Let me explain. In late October 1981, I was a housewife living in Sri Lanka who certainly did not have the means to travel from South Asia to central Florida. The previous year, I had published a paper in the summer issue of the *Journal of Aesthetics and Art Criticism*.¹ Soon afterward, I received a letter in a somewhat shaky hand from a gentleman in New York, David Mandel, who identified himself as a former labor

lawyer who was passionate about the subject of art and evolution, to the extent that he himself had published a book about the subject.² He told me how much he liked my article and that he hoped we would meet someday. As it happened, I visited New York briefly that fall, so we did meet, and, after I returned to Sri Lanka, continued to correspond. The next spring, I received a telegram from Jenefer Robinson inviting me on behalf of the ASA to present the Second David and Marianna Mandel Lecture on Art and Biological Evolution, a lecture series endowed by the Mandels. An airline ticket, honorarium, and all expenses were included in the invitation.

The talk was my first “keynote” address, and I called it “Aesthetic Experience and Human Evolution.” I describe all this because in late 1997, when I met Denis Dutton for the first time, he confessed that he had been at that Tampa conference but did not attend my lecture because “the subject didn’t interest him.” So I think it aptly ironic and amusing that, thirty years later, I was invited to talk about *The Art Instinct*,³ since “aesthetic experience and human evolution” is exactly what Denis’s book is about.

In the interval, he had read my second book, *Homo Aestheticus*,⁴ and given it a long, serious, and positive review in the Bookmarks section of *Philosophy and Literature*.⁵ His review was, and remains, the lengthiest, most thoughtful, and most positive review that the book has received.

So what happened in Denis’s thought between 1981 and 1994, the year of his review? I appreciate the irony of the fact that the man who in 2009 published a blockbuster called *The Art Instinct* (by far the most well-known discussion on the subject of aesthetic experience and human evolution) passed up an early opportunity to hear a talk about just that subject. Perhaps it was his reading *Homo Aestheticus* that converted him. In any case, he was certainly fully on board at our first meeting, and we easily became both colleagues and friends at that time.

Besides our (by then) shared interest in art and evolution, we discovered many biographical and personal overlaps. Astronomy? I knew the names of all the constellations (and a bit more) from a class I had taken; he had a telescope in his backyard. South Asia? I had lived in Sri Lanka, he in India. South Asian music? I had come to love the stuff; he had learned to play the sitar. Classical music? Piano was my undergraduate major and I still played chamber music; he listened to classical music constantly on earphones and at concerts, took piano lessons as an adult, and had hosted a classical music radio program. Anthropology? I had lived in Nigeria and Papua New Guinea (PNG) as well as Sri Lanka

and India, later using my experiences and readings in my thought and work; Denis's doctoral thesis focused on the relationship between art and anthropology, especially on the problems and possibilities of cross-cultural understanding. He had lived with carvers in the Sepik River area of PNG. He and I each owned a "war rug"—an Afghani carpet with woven tanks and helicopters (instead of floral and animal motifs) that was made during Afghanistan's war with Russia.

There's more. I learned recently from an obituary that as a university student Denis "found himself particularly fascinated by the philosophy of art: 'I was trying to figure out how works of art—literature, music, paintings—could produce such intense experiences in human beings.'" My own interest in human ethology (behavioral biology laced with evolution) was sparked by an overpowering music-listening experience I had as an eighteen-year-old undergraduate.

Although we met rarely—perhaps four times—we stayed in touch by telephone and e-mail. Denis was politically much more conservative than I and had much more expensive and luxurious tastes. But we forgave each other these differences because we liked each other a lot. Rereading his book in preparation for my talk and this essay brought his presence vividly to mind: his way with words and the apt phrase, his well-furnished mind, his fundamental seriousness that was not inconsistent with a good sense of humor, his intellectual curiosity, and his passion for the arts. Harder to convey in a book is his extroversion and energy, his generosity of spirit, and his genial and collegial personality. Like many others who knew and cared for him, I miss him very much.

I hope that I have clearly established that we were friends as well as colleagues. It is unfortunate, then, that he cannot read and respond to the comments that I make in the remainder of this essay.

The Art Instinct deserves acclaim for many reasons. It is written with clarity, elegance, knowledge, passion, seriousness of purpose, and wit. It is engagingly presented and should appeal to any intelligent person who has an interest in the arts. Additionally, I think that it succeeds admirably in viewing problems in the philosophy of art through an evolutionary lens. No one had done this before, and thanks to Denis's deep and wide understanding of visual art and music, his book has a richness that no evolutionary scientist of my acquaintance has achieved. His emphasis on beauty, skill, and pleasure are age-old leitmotifs in the philosophy of art. The discussions of intentionality, forgery, and Dada in chapter 8 are contributions to modern theoretical aesthetic problems,

examined with Darwinian theory to show why these three issues have been so contentious.

Ironically, this grounding in aesthetic philosophy—even though it intends to (and does) give philosophers of art an appreciation for the biological or evolutionary basis for their subject—results, I think, in unconvincing arguments for one of the book's primary claims, that the arts are adaptive or "instinctive."⁶ Discussions about art from any point of view are often confusing and confused, not only because use of the term has been historically ambiguous but also because it is not always clear whether the subject is art as an activity (making), a product (the object or "work"), or an occasion for psychological appreciation ("aesthetic" experience). Generally speaking, Denis's emphasis, like that of philosophers of art, is on aesthetic experience, although he does *say* that he intends to treat art "as a field of activities, objects, and experiences that appears naturally in human life" (p. 50). He also addresses "expressive making that seems 'artistic'" (p. 29).

However, the primary subject of the book is aesthetic experience, as the subtitle attests—to our experience of pleasure in the appreciation of beauty or, as Denis might have put it, an "accounting for taste." Much less attention is paid to the actual predisposition to make or actively participate in art, even though there is considerable archaeological evidence that humans universally make art and have done so for about a quarter of a million years,⁷ and no evidence whatsoever of how these earliest marks or later images were experienced.

There is probably an insurmountable chasm between the philosophy of art (and of the philosophies of morality, language, and mind) and the evolutionary psychology of these subjects. Both ask why there should be such a thing as these at all in our genus *Homo* and both wonder how they work. But evolutionary theory has certain scientific requirements for posing and answering these questions. One must identify an adaptive (or fitness-related) problem in the ancestral past that the behavior in question (here, art making or art appreciation) was designed to address and solve and then describe the special-purpose design features of the adaptation that contributed to the proposed solution. It is important to identify proximate and ultimate mechanisms of causation and function. Adaptive behaviors are things like speaking, living in social groups, male-female bonding, caring for babies, engaging in warfare, being suspicious of strangers—a psychological or behavioral predisposition that helped our ancestors to survive in their Pleistocene environments and ways of life.

For me, as an avid experiencer of the arts, *The Art Instinct* is a trove of lively observations and stimulating ideas. However, as a scholar of evolutionary psychology, I find two assumptions in it that do not support, and even clash with, Denis's claim that art is adaptive. First, his "cluster criteria" definition does not permit a suitable evolutionary characterization of art. Second, a tacit adherence to the Western philosophical concept of art subverts the necessary universality that is required for claiming that it is a product of evolution. Additionally, I disagree sharply, for a number of reasons, with Denis's adoption of the sexual-selection argument for the adaptive function of art, which belies his otherwise sophisticated judgments.

I

Cluster Criteria

Direct pleasure
 Skill and virtuosity
 Style
 Novelty and creativity
 Criticism
 Representation
 Special focus
 Expressive individuality
 Emotional saturation
 Intellectual challenge
 Art traditions and institutions
 Imaginative experience

According to Denis, the twelve cluster criteria in his definition of art apply variously to performances, acts of creation, and experiences (as well as artifacts and objects), and are features of works of art and qualities of the experience of art (p. 50). But, as listed, they are too diverse to help us determine exactly what is adaptive and how. Moreover, as a whole they are less descriptive of what artists are predisposed to do than with what perceivers experience in art: pleasure, intellectual challenge, and imaginative experience. (Two other criteria, criticism and art traditions and institutions, are responses to art experience after the fact.) Pleasure is a good indication that what causes it might be adaptive, but what exactly is that? Certainly artists *use* skill and virtuosity, style, novelty

and creativity, representation, expressive individuality, and emotional saturation as they make art; but, as Denis rightly admits, each of the twelve criteria also characterizes other nonart entities—even though an instance of art usually possesses a large number of them. Although artists may use or display these features, they do so in the service of another activity—making art—that is not itself defined. As I see it, only one of the criteria, special focus, or bracketing, applies to what an artist does when “artifying,” or making art.⁸

As a philosophical contribution, the cluster criteria are of interest, but they make no helpful contribution to an evolutionary theory of art. In order to establish that a human behavior (like making or appreciating art) has evolved and is adaptive, one must say exactly what this behavior refers to, behaviorally (which means finding neurological and paleoarchaeological as well as observational evidence). A behavioral predisposition can originate, evolve, and be adaptive. A cluster of characteristics cannot—although individually, each characteristic, recast as a behavioral predisposition, perhaps might.

II

Western languages do not have a verb for what people do when they make art—when they “artify”—and as is well known among philosophers of art today, the word for anything like our concept of “art” does not appear in preindustrial languages.⁹ “Art” is our modern category; an evolutionary argument must situate it in what we know of lives and activities in the Pleistocene. Denis tries to do this when he describes the art and thinking about art of Sepik carvers, members of a society whose lives are closer than ours to ancestral ways of life. He finds that their work possesses some of the characteristics of his cluster definition and thus deserves to be called art. However, as befits a philosopher of art, his underlying view of what art is remains tied to Western elitist assumptions, even though he discusses contemporary popular arts (e.g., calendars, Hollywood, soap operas, and romance novels).

Most of Denis’s statements, including the twelve characteristics in his cluster definition, do not apply very well to the arts in traditional or small-scale societies—the sorts of societies in which the arts developed as evolutionary solutions to adaptive problems in the Pleistocene. As evident in his final chapter (“Greatness in the Arts”), he is most concerned with Western art, especially fine, high, or elite art; this bias also occurs elsewhere in the book. It is also evident in his chapter on the

uses of fiction, which for me has some of the same difficulties as other scholars' evolutionary discussions of literature.

In positing the evolution and adaptive value of fiction, Denis, like others, tends to be concerned with stories that postdate the invention of writing—although he does say, correctly, that writing made possible more variety and complexity in stories (pp. 132–33). But, again, if one is making an evolutionary argument, one must be concerned with preliterate or oral literature, and suggest what it is about the earliest stories that was adaptive to our remote ancestors. Although he does speak of “stories” and “storytelling,” these are neutral terms that do not in themselves imply artfulness.

Indeed, Denis does not say what, apart from his twelve criteria, makes a story artful. Is *any* story art? Denis mentions “the fundamental attraction of a rational, coherent story well told” (p. 134). Again, one can ask: what makes it well told? The twelve criteria? As far as being “rational” and “coherent,” most of the earliest stories or myths I have *read* (transcribed, of course, from oral literature) do not strike me as rational or coherent. But if in their oral form they were not “well told,” the audience for the storyteller would have crept away. If rationality and coherence are not really necessary, we may again ask what makes a story—that is, the *fabula* (what happens)—“well told.”

Denis echoes Joseph Carroll, who claims that stories (art) provide “imaginative experience” (criterion 12 and p. 103).¹⁰ But the ability to imagine is not in itself art—we may use imagination in telling a story or in hearing or reading it, but then, as with skill and the other cluster criteria, we are talking about *imagination*. Again, how do we know that a story is *artful*? Denis also mentions “decoupled cognition,” or “the ability to imagine scenarios and states of affairs not present to direct consciousness” (p. 105), which also is not necessarily art.¹¹ Pretend play (p. 106) is not art—nor are skill and virtuosity, novelty, creativity, and originality. How do artistic imagination, artistic skill, artistic virtuosity, artistic novelty, et cetera differ from nonartistic imagination, skill, virtuosity, creativity, and so forth? *This* is the important question. As I mentioned earlier, Denis admits that each of his twelve criteria can characterize other, nonart experience. Again, this is, I think, a serious problem for his *evolutionary* argument, although perhaps not a problem for the philosophy of art (itself a product of literate society) regarding works that have been conceived and made in the Western tradition (and perhaps works from other literate high civilizations).

Denis mentions Plato's disapproval of fiction and the arts. But, according to Eric Havelock, fourth-century Athens was on the cusp between an old, preliterate or oral culture and a new, literate one. Thus, Havelock proposes that the stories ("poetry") that Plato objected to were presented orally by bards who used musical and poetic devices to arouse and manipulate their audience's emotions.¹² What devices? I would say such things as creating curiosity, suspense, and surprise by means of recognizable and definable operations (such as simplification or formalization, repetition, exaggeration, elaboration, and manipulation of expectation) upon words and themes. These create the *sjuzhet*—the way the story is told, making it artful or not.¹³

Certainly, stories are "essentially about problems and conflict, human relations" (p. 118). But art (artification) takes ordinary problems and in the telling (by "special focus" or bracketing, using aesthetic operations like those mentioned in the previous paragraph) makes ordinary experience extraordinary, attracting attention, sustaining interest, and manipulating emotion, as all the arts do.¹⁴ Denis himself says that "storytelling is capable of taking us beyond the ordinary" (p. 119).

Similarly, the "functions" for literature proposed by Denis (and other theorists)—for example, providing a low-cost, low-risk surrogate or vicarious experience (Tooby and Cosmides), an instructive source of factual information (Scalise-Sugiyama),¹⁵ and the extension of mind-reading capacities, or "theory of mind" (Zunshine)¹⁶—can be acquired whether or not the "story" is art (either in terms of "cluster criteria" or some other definition). A good evolutionary question is, why are some stories artified?

III

In chapter 7, "Art and Human Self-Domestication," Denis turns to "skill, style, and a sense of accomplishment—*values we admire* in art" (p. 136), which further leads him to adopting Geoffrey Miller's (and Darwin's) "sexual selection" argument for the arts. Again, this explanation is based on the experience of the perceiver (gaining his or, more often, *her* attention and approval), or aesthetic experience—the province of the philosophy of art.

It is well known that, in the animal world, males of many species display ornaments and showy behaviors that are used in courtship to attract females for mating. Darwin gives many examples, and suggests that human arts are analogous to the peacock's tail or the male bowerbird's

decorated love nest. In some cases, this is obviously so. But the analogy is much too thin to bear the weight that these theorists erect upon it.

Both Denis and Miller begin with language, positing that it evolved through successful courtship. (It is not surprising that, as good talkers themselves, they find such an idea plausible.) Denis points out that language's meanings and usages extend beyond utility for survival, as in having a large vocabulary, cleverness and originality of expression (à la *Cyrano de Bergerac*), and general wit and intelligence. These attributes of speaking have been shown to be affected by testosterone, at least part of the reason why men, as a rule, seem to be more articulate than women (who are more verbal as children),¹⁷ and supportive of the hypothesis that the ability to speak well may have evolved in the service of males' sexual or status display.

However, Darwin, Miller, and Dutton—all three—have got singing wrong. Darwin hypothesized that music (singing) in humans may have evolved from courtship songs of our primate ancestors.¹⁸ Yet the only primates that “sing” are gibbons, which are monogamous. Their “songs” are duets, uttered as a pair to advertise their joint territory to other gibbons. (In the Southern Hemisphere, there are many duetting birds, which are monogamous, suggesting that singing, rather than attracting new potential partners, keeps them together as a pair.) The three have also got wrong the idea that the “number-one topic for poetic and sung language worldwide and through history” (p. 149) is love. In many African societies, “praise poems” or panegyrics for wealthy and powerful individuals are the primary theme. In many other traditions, devotional hymns, nature poetry, laments, and elegies are prominent; Tamil epic sung poetry is concerned with love . . . and war. I am told by one of the compilers of the Hopi-English dictionary that the Hopi have *no* love songs whatsoever.

But there are at least four more serious problems with a sexual-selection hypothesis for human art.

(i) *Ancestral arts were probably ceremonial, with group participation.* Denis says that “performance” is critical to art (p. 186), but he does not mention participation. Yet in traditional societies participation is the norm, with individuals, no matter what their level of ability, singing, dancing, and drumming in groups or decorating their bodies or making their own costumes—often, identical ones that emphasize similarity rather than individuality. What is more, many ceremonies proscribe attendance by the opposite sex.

Ceremonies are typically multimodal, with costume, song, dance, drumming, and literary language occurring all together. Although there are certainly highly regarded individual carvers, dancers, and drummers in some societies, adaptive hypotheses based on only one art or only one artist (as fitness-maximizer at the expense of others) are not universally applicable.

Indeed, along with allowing individual competitive display, participation in multimedia events is a common vehicle for social coordination and emotional unification. Keeping together in time with others results in the production of neurochemicals such as oxytocin, which reinforces feelings of confidence, trust, and belonging as it also counteracts the effects of cortisol (a stress hormone).¹⁹

(ii) *Making (participating in) and appreciating art has benefits for all, not only the most skilled.* Like other adaptive abilities that contribute to the evolutionary fitness of individuals—for example, language, sociality, cooperativeness, manual competence, and foresight—art making and participation are not the province of just a few virtuosos. All normal individuals speak, but not everyone is an esteemed orator; most of us learn to swim, but not everyone is an Olympic champion; anyone can learn to prepare edible food, but not all are chefs. Similarly, any art can be understood, not as a product of extreme talent, but as a general human capacity that is endowed on a bell curve. The predisposition to make and respond to art is a general human behavior that benefits all humans, not only males and not only the best artists. A plausible evolutionary view of art would have to acknowledge the art making of children, patients in therapeutic settings, and ordinary people, all of whom are human and therefore have the evolved predisposition or capacity.

(iii) *“Costly signals” can operate on more than one “frequency.”*²⁰ The “costliness” of art making and performing can send a variety of messages besides “Look at me, I’m the best.” Other implications include:

“We really mean it” (i.e., “We really care”): our wish for a successful outcome—whether it be a good hunt, a prosperous harvest, a healthy child, a healed illness or wound, or a victorious battle—is so strong that the spirits in charge will surely notice our display and grant our desire.

“We as a clan are powerful and generous”: that is, the display of wealth is borne by the entire group.

“We are eternally bonded as kin” or “Becoming an adult male is really important”: that is, permanent scarifications and tattoos or elaborate costumes may indicate groups or subgroups, not individuals.

“Our beliefs are true”: for example, the size and sumptuousness of great cathedrals or temples signal the power of the religion and the piety of the community, so that one could not disbelieve the message when experiencing such magnificence.

(iv) *Traditional art is typically conservative, not idiosyncratic.*²¹ Despite the observation that today’s rock stars and professional athletes attract groupies, it seems simplistic to argue that throughout human history and prehistory artification has only, or even primarily, the ultimate purpose of competitive display by males for social and sexual dominance. This notion may seem plausible in modern capitalistic, competitive, media-saturated societies but has much less validity in Pleistocene subsistence societies that required their members to work in unity. In his argument against a social cohesion hypothesis, Denis approvingly quotes Steven Pinker’s remark that the social cohesion hypothesis for the evolutionary adaptiveness of art behavior cannot “do justice to the ambivalent mixture of selfish, nepotistic, strategic, and self-advertising motives that really animate a person’s feelings toward his or her group” (p. 225). I am not sure that our group-dependent hunter-gatherer ancestors were quite so individualistic or libertarian as those that Pinker describes. But if so, then it would seem an excellent reason for something like ceremonial multimedia art performances to arise and persist, in which (at least for a period of time) bodies and brains are entrained, the latter secreting neurochemicals that create individual trust and a feeling of one-heartedness.²²

Originality and creativity are suspect in many societies where artifacts or behavior that are not made or performed according to age-old conventions will not work. Denis denigrates the crafts, which he characterizes as showing only *competence* and made with a preconceived end in view. But there is a continuum from churning out the same ceramic mug over and over again to making a complex, original utilitarian object. Looking at the lives of our prehistoric ancestors, we can appreciate that craft is rooted in the fundamental human impulse to use mind and hands to transform basic materials into objects of utility and beauty. Craft is grounded in the life of the body and the physicality of material. The distinction between craft and art can be very blurry, particularly in societies where people use their hands to make important objects for their lives.

IV

The fact that *The Art Instinct* does not convincingly show that art is an “instinct” or an adaptation does not mean that the book fails. At the very least, it has introduced the human importance of the arts to tens of thousands of people who would not otherwise have entertained the idea. The chapter on art and human nature is a capsule summary that every art lover should copy and pin to the wall. In any case, there will always be more to say: the field of psychobiology of the arts is developing, and our hypotheses gain strength as we incorporate the flood of new findings about the human past and the human mind.

Denis was ever learning and questioning, and, had he lived, would surely have had more to say. Until two weeks from the end, even when bedridden, he was reading his colleagues’ papers in attachments, recommending articles he liked, and commenting on our e-mail exchanges. On November 20, 2010, he wrote:

Have had a few rough patches in terms of health. . . . I’m crippled, confined to bed, unable to walk. Damn. Trying to keep up with your lovely conversations here. What with all the morphine, it’s the best I can do.

As far as I know, none of Denis’s close colleagues suspected that while he was writing, publishing, and then enjoying the acclaim of his book, cancer had been and would be again his companion. I saw him for what would be the last time at a workshop of evolution-and-arts scholars in Auckland in December 2006. On the last day, after Denis had said goodbye and left for the airport, I remember several of us speculating that he had seemed uncharacteristically quiet and “pensive.” When I wrote to him about it right after the workshop, he replied,

Pensiveness had to do with work for the week and a sneaking regret that we spilled over into Monday (leaving Sunday night would have been more convenient). . . .

But in September 2010, after I first heard of Denis’s cancer, he replied to a message from me:

Didn’t I mention this diagnosis to you in Auckland? I thought I had. That was very early and I didn’t know if it was going to advance. Alas, it has, and I have a kind of resistible bone cancer in my shoulder (and elsewhere).

But it is not as deadly and aggressive as other bone cancers, and I am responding to the chemo, which does not happen with most people.

Well, that explained the “pensiveness” in 2006, which was most unlike his usual energy and bonhomie. I well remember running behind him to keep up as we strode “together” to a hotel elevator or dining room. He *was* a “Constant Force” (his e-mail name) and I think I speak for his other colleagues as well as myself in saying that his example will remain both constant and forceful in our continuing efforts to understand the role of the arts and aesthetic experience in our ancestral past and today.

When I reread Denis’s chapter “Greatness in the Arts” (one of the best), my heart seized when I came upon what he says about “serious content” (the second of four primary properties of masterpieces): great art may give, among other things, “what might be termed a realistic view of the finitude of life and aspiration” (p. 237). And I will always wonder whether Denis was thinking of his own mortality when he wrote these words.

However, as we idly or seriously contemplate the finitude of our own life and aspiration, we can remember this example of Denis’s kindness and courage:

September 2010. When I go for treatment I see mums with young toddlers there, and teenagers. No self-pity is possible! . . . I’ve had such a charmed life in so many respects that it would be unreasonable for me to feel very sorry for myself. Our son in Sydney, Ben, has just proposed to his dreamboat girlfriend. She is so super! And Sonia opened her art gallery in Austin, Texas, last week, and my book is an embarrassing success. . . .

Got new projects now I want to take on for our summer, which is just beginning.

Warmest wishes,
Denis

I’ll conclude with a “pure Denis” message from two years ago that conveys his unique spirit as well as anything anyone has written about him:

27 Jan. 2009. Next week at this time, I’ll be back in sleepy Christchurch, dreaming of the glory days—the stretch limos to take me to CBS and the Comedy Central studios, the dinners at Elaine’s, the adulation. It’ll all be over. But for now—violins, please—I live the dream. . . . Sigh . . . And . . . thank you, Mr. Darwin, wherever you are. . . . (steps out of the spotlight)

1. Ellen Dissanayake, "Art as a Human Behavior: Toward an Ethological View of Art," *Journal of Aesthetics and Art Criticism* 38 (1980): 397–406.
2. David Mandel, *Changing Art, Changing Man* (New York: Horizon Press, 1967).
3. Denis Dutton, *The Art Instinct: Beauty, Pleasure, and Human Evolution* (New York: Bloomsbury Press, 2009). Subsequent references are inserted in the text.
4. Ellen Dissanayake, *Homo Aestheticus: Where Art Comes From and Why* (New York: Free Press, 1992).
5. Denis Dutton, "Fire Is Hot, Hunger Is Bad, Babies Are Good," *Philosophy and Literature* 18 (1994): 199–210.
6. Interestingly, biologists stopped using the word "instinct" decades ago, and replaced it with "predisposition," particularly with regard to humans. But "instinct" is obviously a good word in a title, Steven Pinker's *The Language Instinct* being the most renowned, as it occurs in other post-Pinker "instinct" titles; for example, *The Moral Instinct*, *The Music Instinct*, *The Faith Instinct*, *The Forgiveness Instinct*—all good sellers. Readers can Google "book," "title," "instinct" and find many more than these five books by eminent psychologists and science writers who must know that "predisposition" is the more accurate, if less mind-grabbing, term.
7. Robert Bednarik, in *The Human Condition* (New York: Springer, 2011), provides even earlier evidence of red-ocher mining and use in South Africa, cup-shaped petroglyphs in India, and small carved figurines from the Middle East.
8. I refer here to my own adaptive view of art as recently articulated, for example, in Ellen Dissanayake, "The Artification Hypothesis and Its Relevance to Cognitive Science, Evolutionary Aesthetics, and Neuroaesthetics," *Cognitive Semiotics* 5 (2009): 138–45; and "A Specifically Ethological View of Art: The Artification Hypothesis," in *Art as Behaviour: Evolutionary Foundations of Music, Visual Art, Verbal Art, and the Built Environment*, ed. Wulf Schiefenhövel (Oldenburg: BIS-Verlag, 2013), pp. 42–60.
9. The Latin *ars* refers to craft or skill.
10. See, for example, Joseph Carroll, "An Evolutionary Paradigm for Literary Study," *Style* 42 (2008): 103–35. Unlike Dutton, Carroll defines art, suggests an adaptive problem that it solved, and proposes design features that mediate this adaptive function (122), thereby offering a cogent evolutionary argument.
11. John Tooby and Leda Cosmides, "Does Beauty Build Adapted Minds? Toward an Evolutionary Theory of Aesthetics, Fiction, and the Arts," *SubStance* 94/95 (2001): 6–27.
12. Havelock, *Preface to Plato* (Cambridge: Belknap, 1963).
13. Ellen Dissanayake, "Prelinguistic and Preliterate Substrates of Poetic Narrative," *Poetics Today* 32 (2011): 55–79.
14. Denis's criterion of "emotional saturation" (pp. 121–22) that refers to "mood" or "tone" is also achieved through *what is done* to the story, by means of the "operations" just described.
15. Michelle Scalise-Sugiyama, "Food, Foragers, and Folklore: The Role of Narrative in Human Subsistence," *Evolution and Human Behavior* 22 (2001): 221–40. She does not say that narrative is "art."

16. Lisa Zunshine, *Why We Read Fiction: Theory of Mind and the Novel* (Columbus: Ohio University Press, 2006).
17. See J. M. Dabbs Jr. and M. G. Dabbs, *Heroes, Rogues, and Lovers: Testosterone and Behavior* (New York: McGraw-Hill, 2000); and Andrew Sullivan, "The He Hormone," *The New York Times Magazine*, April 2, 2000.
18. Denis, lover of music that he was, showed that he doesn't totally accept the "mating call" hypothesis, when he said that harmonic "key modulations . . . are late inventions in musical culture. . . . How they stir the mind is another mystery of evolution" (p. 218).
19. See Walter Freeman, "A Neurobiological Role of Music in Social Bonding," in *The Origins of Music*, ed. Nils L. Wallin, Björn Merker, and Steven Brown (Cambridge: The MIT Press, 2000), pp. 411–24; and Markus Heinrichs, Thomas Baumgartner, Clemens Kirschbaum, and Ulrike Ehlert, "Social Support and Oxytocin Interact to Suppress Cortisol and Subjective Responses to Psychosocial Stress," *Biological Psychiatry* 54 (2003): 1389–98.
20. Larry S. Sugiyama and Michelle Scalise-Sugiyama, "Social Roles, Prestige, and Health Risk: Social Niche Specialization as a Risk Buffering Strategy," *Human Nature* 14 (2003): 165–90.
21. See Nancy Aiken and Kathryn Coe, "Promoting Cooperation among Humans: The Arts as the Ties That Bind," *Bulletin of Psychology and the Arts* 5 (2004): 5–20; and Kathryn Coe, *The Ancestress Hypothesis: Visual Art as Adaptation* (New Brunswick: Rutgers University Press, 2003).
22. Dutton even says, "Stories are a transaction between reader and author. . . . They are essentially communicative and therefore social events" (pp. 124–25). This does not sound like sexual display to me.